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MATERIA MEDICA OF INDIA

AND THEIR

THERAPEUTICS.

BY

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To

THE RIGHT HONOURABLE

LORD REAY, G.C.S.I., G.C.I.E., LL.D., &c.,

Late Governor of Bombay.

IN grateful recognition of eminent services rendered to the cause of education in general and medical education in particular, and of many and beneficent medical reforms introduced in the Bombay Presidency, and the sympathetic solicitude evinced for raising the status and position of the local medical profession,

This work has been, by permission, respectfully dedicated.

PREFACE.

MATERIA MEDICA OF INDIA AND THEIR THERAPEUTICS.

THERE are many excellent works on Materia Medica and Therapeutics, and any one who desires to gain a knowledge of medicinal substances and their effects on the human constitution, has ample materials at his disposal. The scope of these works is, however, confined to drugs generally used only by civilized nations, and these, really speaking, constitute the Materia Medica of Europe and America. So far as these drugs are concerned, the science of Materia Medica and Therapeutics has been brought to a high state of perfection. But in India, with a population of 33 crores, drugs are in use which, though crude and often imperfectly prepared, have for ages satisfied the wants of the people. Though the pioneers of Medical Science have tried to confer the benefits of the more exact Western Science on India during the last 50 years, they have not succeeded in placing these benefits at the doors of more than a very small percentage of its huge population. By far the greater number of the people either do not like or cannot afford to avail themselves of Western Materia Medica. The result is that these millions of people are treated by indigenous practitioners who are called Vayids or Hakims. Some of these have studied old works on Medicine written in Sanscrit, Urdu, Arabic or Persian ; while others do not know a word of Medicine or Medical Science ; all the same they practice the healing art by resorting to remedies prescribed by, and drugs handed down from, father to son. Thanks to the *vis medicatrix naturæ*, people in the majority of cases do not come to grief by this haphazard mode of treatment. It must at the same time be admitted that, by long experience and natural intelligence, some of these indigenous practitioners have succeeded in securing a fair amount of skill in treating their patients. They make use of drugs which have been proved by ages of experience to really possess marked therapeutic virtues.

It is with a view to supplying medical men with a knowledge of the various drugs and remedies used in India that this work has been

taken in hand. The first attempt in this direction was made in 1887 by the publication of the 'Bombay Materia Medica and Therapeutics.' The scope of that work was confined to the treatment of Indian drugs only; but from the support given to it, there is reason to believe that the work supplied a long-felt want. This edition being exhausted, a second one was suggested to meet the needed demand. On reflection, however, it appeared that instead of publishing a second edition on the lines of the first, it would be an advantage to enlarge the scope of its utility by treating Materia Medica as a whole, that is to say, by finding place for Indian drugs side by side with those generally used by Western nations; in fact by preparing a comprehensive work on Materia Medica and Therapeutics. It is expected that such a work will be serviceable to both medical students and general practitioners. They will be doubly benefited. Firstly, they will possess a regular work on Materia Medica treating of drugs which they have to use in every day practice. Secondly, they will be enabled to judge of the comparative merits of the Indian and European drugs and to assign to each its true medicinal value. Moreover, the work will encourage practitioners to carefully study and note the effects of these indigenous drugs, so that in time India may have a complete Materia Medica of her own. It may be mentioned here that the first part of this new work, namely, that treating of Materia Medica of Europe and America, is compiled after a very careful and close study of the many excellent works published in Europe and America on that subject. Every attempt has been made to bring the work to an up-to-date standard by incorporating into it, as far as possible, the suggestions of the British Pharmacopœia of 1898. Many important unofficial preparations which have long fallen into disuse or are omitted from the new Pharmacopœia, but equivalents of which are still used by natives or qualified practitioners, have been retained. In the description of an important drug, its physical properties and chemical constituents are first given, followed by a short account of its preparations and its physiological effects, its principal and characteristic properties being first enumerated. These are followed by the action resulting from an ordinary or medicinal dose, that produced by small and repeated doses, and such as results from a large or poisonous dose. A brief account of its antidotes and incompatibles and antagonists is separately given. Lastly, an attempt has been made to describe its therapeutic uses at some length.

After a careful consideration of the various systems of grouping the drugs adopted by different authors, it has been decided to adopt a mixed plan in this work, *viz.*, to arrange groups of drugs according to their *chemical*, *zoological*, and *botanical* orders, and to describe the individual members of the groups alphabetically.

The groups of drugs belonging to the Vegetable Kingdom are arranged on the natural system, adhering as far as possible to the system adopted by eminent English botanists.

The drugs of the organic compounds are treated in a separate group. A large amount of labour has been expended in collecting information about these drugs. As a large number of them is still on their trial, no attempt has been made to omit many of them. Time alone will show how many will ultimately find a recognised place in works on Materia Medica. In connection with the above it may be mentioned that certain recently introduced remedies, prepared from various organs of animals, such as thyroid gland, bone-marrow, brain, &c., as well as some of the recently introduced sero-therapeutical remedies, have also been incorporated in this work. Coming to the Vegetable Kingdom, the names of allied plants are given along with the names of the principal plants described. Indian drugs are given side by side with similar drugs used in the Western practice. In treating of these drugs their chemical constituents have been given with a view to show the principal ones on which the properties of the various drugs depend—a feature which was absent from the 'Bombay Materia Medica.'

With regard to the preparations, it is necessary to remark that they are generally named after certain useful and chief drugs. In addition to these several names are given by natives which are significant of their principal properties. In describing these preparations, care has been taken to give the strength of the principal ingredients, and in the case of some useful preparations, the names of the different drugs of which they are made. As far as possible, pains have been taken to give the doses after consulting various standard works and the British Pharmacopœia, but in the case of Indian drugs the task has been beset with considerable difficulty. Most of the works on Indian Materia Medica generally omit to mention the doses. Hence in several cases Vayids and Hakims had to be actually consulted, and the doses fixed after much consideration. With regard to the description of drugs and their characters, the plan adopted in the 'Bombay Materia Medica' has been adhered to as far as possible, *viz.*, of writing the description from personal examination of the drugs. In other cases the description has been given after consulting standard works. With regard to

the actions and uses of the drugs used by the natives, it may be mentioned that the literature is vast, but scattered, and one of the aims of the present work is to collect the scattered information. It may, however, be mentioned that in many cases attempts have also been made to obtain information on this head direct from native practitioners and to incorporate results of personal experience extending over 35 years in using those drugs, in verification of the results of the experience of other observers. In the 'Bombay Materia Medica' an attempt was made in the chapter on Mineral Kingdom to give chemical synonyms to the various medicinal articles used by the natives. On subsequent inquiry, however, it was found that all the specimens of a particular drug were not of a fixed but of a varied chemical composition, probably due to the cumbrous and inefficient mode of their preparation. It has, therefore, been decided to keep the vernacular terms as far as possible, giving the chemical synonyms where there was no possibility of any confusion. In the chapter on Animal Kingdom, substances not used in Western Medicine, but highly extolled by native practitioners, have been embodied in the work. In the Appendix will be found, under the heading of Therapeutic Index, an alphabetically arranged list of drugs used in the treatment of various diseases, and a few selected and standard formulæ, as also a list arranged according to their therapeutic effects. Again, a table containing the principal poisons and their antidotes will be found in the Appendix. These, it is hoped, will prove very useful to students as well as to busy practitioners for ready reference.

There are various well-known preparations used by the natives bearing distinct significant or suggestive names. These alone are given in this work; but the large number of prescriptions given in the 'Bombay Materia Medica' has been omitted, as it is presumed practitioners will be able to make out their own prescriptions from their own experience, and from the description of the effects of drugs given in the book.

As this work is edited with a view to stimulate research into indigenous Indian drugs, it is to be hoped that it will afford sufficient materials for the purpose.

In conclusion, the authors cannot allow this opportunity to pass without recording their sense of gratitude to the numerous authors on whose valuable works they have drawn so largely, as well as to those who have assisted them by readily supplying them with important information gained in professional practice.

INTRODUCTION.

Pharmacology.

It is the science which treats of medicinal substances as a whole, describing their physical and physiological properties and their uses in the alleviation and cure of diseases.

Pharmacy.

It is the art of preparing medicinal substances in such forms as to fit them for use by pharmacologists as well as for the use of physicians in the treatment of diseases.

Drugs.

It is a popular term for all medicinal substances whether derived from the animal, mineral or vegetable kingdom, or synthetically prepared from organic carbon compounds.

Materia Medica.

It is the science which treats of the properties of medicinal substances, such as the sources from which they are obtained, their physical characters, chemical composition, mode of preparations, and physiological action.

This term has also been used in a more comprehensive sense, as including almost the whole of pharmacy as also the tests for purity or otherwise of drugs, toxicology, nosology, &c.

Therapeutics.

It is the science and art which treats of intelligent application of remedial measures, including medicinal substances, in the treatment of disease.

Pharmacopœia.

It is a term used to represent a number of important drugs which have been accepted by certain recognised authorities. "The British Pharmacopœia" is a standard work which has received the sanction of

the British Government, and has been published under the direction of the General Council of Medical Education and Registration of the United Kingdom. It includes the nomenclature of drugs, and treats of their sources, preparations, characters, tests and dosage. A revised list is published from time to time every ten years.

Toxicology.

It is the science which treats of the effects of drugs on the human system when taken in poisonous doses, as opposed to the ordinary physiological action when given in medicinal doses. It also treats of the detection of poisons.

Antidotes.

These are drugs or medicinal agents used to counteract the effects of drugs when taken in toxic doses, or of poisons.

AVENUES OR ROUTES FOR THE ADMINISTRATION OF DRUGS.

THERE are various avenues or channels through which medicinal substances may be introduced into the circulation. These are the skin or integument, the subcutaneous cellular tissue, parenchymatous structure, arteries and veins, the respiratory tract, the alimentary canal—as the mouth, stomach and rectum ; the eyes, ears, and the genitals.

The Skin.—By this channel medicines are administered in different ways.

(*a*) *The Endermic Method.*—Blister the epidermis or cuticle with blistering fluid or by applying a piece of lint soaked in strong solution of ammonia and covering it with oiled silk or other impermeable material to prevent evaporation (a much quicker process) ; then dust or apply the medicine on the denuded surface.

(*b*) *The Enepidermic Method.*—Place medicines in simple contact with the epidermis, the drug passing into the system by a process of osmosis. To hasten its effects, apply hot moist poultices over the part.

(*c*) *The Epidermic Method*, otherwise known as *Inunction.*—Oils and fats or medicines dissolved in them are rubbed on the skin to produce constitutional effects.

(*d*) *Inoculation.*—By this method medicines are introduced into the blood through the scraped or punctured skin.

The Subcutaneous Cellular Tissue.—

HYPODERMIC INJECTIONS.—These are solutions used for introducing active medicines in small quantities into the organism through the skin and the subcutaneous areolar tissue.

By this method the drug is very quickly absorbed by the lymphatics and capillary vessels, and the vomiting, which is often caused

by internal administration of a drug, interfering with its therapeutic value, is avoided. In cases in which the drug is either rendered inert or impaired in activity in the alimentary canal, this is the only efficient mode of administration. The drug to be so used is prepared for use either as solution or compressed tabloids. The solution should be fresh and of a neutral reaction, and to avoid decomposition, acetanilid or carbolic acid in minute proportions is sometimes added. Compressed tabloids are very convenient and handy for use. The solution should be injected under the skin and not into it, care being taken not to puncture a vein. The outer side of the arms, thighs, calves of the legs, abdomen and back are considered the most convenient situations for these injections. The practice of pinching up a fold of skin for injection is entirely to be avoided, as this method often leads to bruises, ecchymosis or papules.

Parenchymatous Injections.—Medicines are injected deeply into the tissues—a muscle or a nerve trunk—or into a deep-seated inflammation.

Arteries and Veins.—Arterial and intravenous transfusions. These are resorted to in cases of emergency, or when life is in immediate and extreme danger.

Intravenous Injections.—Blood, milk and various saline solutions are introduced into the veins, in cases of extreme collapse due to cholera, hæmorrhage, diabetes, uræmia, epilepsy, &c. Also solution of ammonia for snake bites, and in cases of narcotic poisoning, opium, hydrocyanic acid, chloroform, &c.

Arterial Transfusion is used for similar purposes and for aneurisms. Great care, however, is required to see that no air goes into the circulation, an accident which would prove immediately fatal.

The Respiratory Tract.—Owing to its extensive blood supply the whole of the respiratory tract acts as an efficient channel for introduction of medicines into the system, which are administered in the form of (*a*) inhalation of vapours or atomized fluids, (*b*) insufflation of powders through the nose and throat, or (*c*) douche through the nose.

The Mouth.—The mucous membrane of the mouth is capable of absorbing medicines or active drugs. In small doses they can be, and are, sometimes introduced into the system through this channel. Various alkaloids may thus be administered. It is, however, the beginning of the alimentary tract, *vis.*, the mouth, which is mostly

used, and most drugs taken into it are intended for the stomach and intestines.

The Stomach and the Intestines.—These are the organs most frequently employed for the administration of medicinal drugs which, passing through the walls of the gastro-intestinal blood vessels and the lacteals, enter the blood, and are thus admitted into the general circulation. Crystalloids in solution more readily pass through the walls of the gastro-intestinal blood vessels than colloidal substances as albumen, fat, gum, gelatin, &c., which require to be emulsified or predigested before being absorbed. Certain medicines as acids, alcohol, bismuth, iodine, iodides, metallic salts, tannin, &c., are given on an empty stomach, for, if given during digestion, the alimentary secretions and the starch of the food chemically act upon them and thus weaken their action. Other drugs as potassium permanganate, arsenic, irritant and other dangerous poisons and drugs, are generally given directly after food; others again as silver salts should be given three or four hours after food, as otherwise they would undergo chemical changes. Cod liver oil, malt extract, phosphates, &c., should be given with food, or directly after food, so that they may enter the blood with the products of digestion. As a general rule, food and medicines are introduced into the stomach directly through the mouth, but in cases of narcotic poisoning, or inability of the patient to swallow from any cause, it is done by means of the stomach pump, and in cases of cancer of the tongue, or of obstructions, stricture, or cancer of the œsophagus, through an opening into the abdominal wall. In tonsillitis and in affections of the mouth, tongue or palate, nasal-feeding becomes necessary.

The Rectum.—Dusting powders, paints, ointments, suppositories, &c., are employed for medication by the rectum. These are rapidly and directly absorbed into the blood. Rectal enemata of food or of medicines are used in severe constipation or in cases where the stomach is unable to retain food or medicine.

Eyes and Ears.—Solutions of medicines of various strengths are dropped into the eyes and ears, or powders are used as insufflation. Also injections for the ear and washes for the eyes are used locally.

Genito-Urinary Organs.—In the case of the urethra, injections and bougies are very common medicaments; very often the bladder is washed with solutions of various agents. In women the vagina is very often injected or washed with solutions or dusted with antiseptic and other powders; pessaries are resorted to and ointments applied when necessary to the os, cervix, and even to the uterus.

PHARMACEUTICAL OPERATIONS OR PREPARATION OF DRUGS.

VARIOUS processes are employed in pharmacy to render a drug fit for medicinal use. The following are some of the principal processes used in pharmacy.

INORGANIC MEDICINAL SUBSTANCES.

Before proceeding with the consideration of the numerous inorganic substances used in medicine, it is necessary to give here a description, with full details, of the processes by which native *vayids* and *hakims* prepare mineral substances for medicinal use. No doubt this process is crude, clumsy and inefficient, but natives attach considerable importance to the details of the process which they name " the process of purification."

Purification.—*Shudhkarvûn* (Guz.)—*shudh* "pure" and *karvûn* "to make." It means, to make metals pure or to purify them, to get rid of their impurities or deleterious properties.

The purification of a metal or of a metallic compound is effected by subjecting it repeatedly to a red or white heat in a furnace. A native furnace is generally a kind of pit made in the ground and called " *Gajû puta.*" This part of the process is called " *Marvu* " (Guz.), which literally means to kill or destroy, *i.e.*, to destroy the metallic character of the substance. Probably oxidation is the result. The heated product is next plunged into oil, whey, sour or stale rice gruel, cow's urine or the juice of plantain tree, or into a decoction of *Dalichos uniflorus.* The inorganic substances so treated are very often mixed with alkaline ashes, sulphur, or with sulphide of arsenic, and then once again rapidly heated to a red heat, when they are fit for use medicinally. Some metals, as gold and silver, are mixed with other metals to purify them.

Incineration.—*Bhasmakarna—bhasma* " ashes " and *karna* " to reduce to."

In this process the substance is raised to a white heat, and the resulting mass is then reduced to a fine powder when cooled.

Another method. The crude metal in coarse powder is wrapped up in *jâmbul* (*Eugenia jambulana*) leaves or in the leaves of *bhuiringni* (*Solanum xanthocarpum*), then folded in pieces of rag, and the whole is covered with a layer of red clay, about an inch in thickness. It is then surrounded by a number of dry cow-dung cakes, "*Chhânâ*," which are ignited and kept burning till the outer layer of the clay assumes a brick-red appearance. When cool, the coverings are removed and the mass reduced to powder.

Carbonization or Calcination.—It is a process whereby an organic substance is charred or reduced very nearly to a state of carbon. This is effected by heating it in a closed vessel to drive away the volatile constituents like oxygen, hydrogen, water, &c.

Clarification.—This process consists in the removal from a turbid fluid of solid particles to which the turbidity of that fluid is due. This is effected by fermentation, heating, addition of other substances, or by allowing the fluid to stand long at rest.

Colation or Straining.—In this process, coarse, solid particles are intercepted by means of cloth made of cotton, flannel, muslin or gauze, woollen felt, &c.

Comminution.—By this process a solid body is reduced to coarse pieces or granules.

Crystallization.—Solid bodies are divided into two groups—(1) those which are capable of forming crystals, (2) and those which cannot be crystallized. The process of crystallization consists in obtaining the former in a crystalline form from a solution, either by evaporation, cooling, or precipitation, or by fusion or by sublimation. The size of the crystals varies according as the process is carried on slowly or rapidly. The slower the process, the larger the crystals.

Decolouration.—It is a process of removing colouring matter from medicinal substances. The substance mostly employed is animal charcoal. Substances to be decolourized should either be fluids or in solution if solids.

Desiccation or Drying.—It is a process by which a solid is deprived of its moisture. It is effected either by exposing a substance to the sun or warm weather, or by placing it in a heated chamber. To remove chemically combined water, it is necessary to raise the substance to a very high temperature or to act chemically.

Dialysis.—Substances are divided into crystalloids and colloids. The former possess the property of passing through a diaphragm resting upon water, while the latter remain on the upper surface. The process by which these are separated is called dialysis, and is applied usefully in separating from a vegetable drug, active and crystallizable constituents from the colloids, which are comparatively inert substances.

Distillation.—This process consists in the evaporation of a volatile substance or substances by the application of heat and subsequent condensation of the vapour into a liquid form by cold. It is usefully applied for separating volatile substances from fixed constituents, as also for mixing volatile substances which otherwise could not be mixed.

Destructive or Dry Distillation.—It is a process by which wood or other similar organic substances are decomposed by heat when the volatile products are evaporated and collected, and the residue left is carbon.

Expression.—It is a process by which juices and fixed oils are pressed or rather crushed out of vegetable substances such as roots, leaves, seeds, fruits, &c.

Filtration.—It consists of the removal of solid particles from a fluid to such an extent that the fluid becomes transparent. This is done by filters, the medium used being charcoal, sand paper, &c.

Fusion.—By this process solids are liquefied by the aid of heat, *e.g.*, ointments, plasters, resins, &c.

Granulation.—By this process many salts are converted from their coarsely crystalline form into a granular state. To effect this, first dissolve the salts in water, evaporate the solution, and keep up constant stirring until it becomes dry, *e.g.*, potassium citrate and carbonate.

Maceration.—This process consists in extracting active principles from vegetable substances in coarse powder or slices, by dissolving them by alcohol or other suitable liquids in which they require to be kept for some days and occasionally shaken. The liquid is then separated and the residue expressed, and both the fluids are then mixed, *e.g.*, tinctures and the extraction of alkaloids.

Percolation or Displacement.—It is a process in which alcohol or other suitable liquid is poured over and made to pass through a drug in coarse powder with the object of dissolving out and carrying

along with it active substances contained in that drug. The fluid thus collected is called a percolate. The liquid used as a solvent is called the menstruum.

Precipitation—Consists of the separation of a solid from a liquid in which it is dissolved. This is generally effected by chemical reaction, but sometimes advantage is taken of the different degrees of solubility of that substance in particular liquids. Hence a solid dissolved in alcohol can be precipitated if water is added, if it is insoluble in the latter, as in the case of resins. Sometimes heat or light produces precipitation, as in albumen, silver salts, &c.

Sublimation.—By this process volatile solid substances such as sulphur, mercury, and arsenic, are heated and the vapour collected and condensed with a view to purify them.

Among the natives an apparatus is used called "*Urddha pâtana yantra.*" It consists of an earthen dish in which the volatile solid is placed. This is covered over with another earthen hollow basin and their edges hermetically sealed with clay. To the lower dish heat is applied, while the upper one is kept cool by means of wet rags.

Roasting.—In this process an organic substance is subjected to heat short of carbonization, whereby some important constituents are modified or expelled, *e.g.*, coffee, rhubarb, &c.

Elutriation.—By this process the coarser particles of a material are separated from the finer ones, by means of water, by allowing the former to settle down at the bottom and decanting the fluid containing the finer particles.

Trituration.—By this process a solid by continuous rubbing in a mortar with an inert and gritty substance is reduced to a very fine powder. Sugar of milk is used for this purpose.

Levigation.—It is another process of trituration in which the substance rubbed is in the form of a paste made with water or some other liquid and the rubbing is carried on on a slate.

Evaporation.—It is a process by which the bulk of a liquid is reduced by driving it off in the form of vapour by the application of heat.

CONSTITUENTS OF ORGANIC DRUGS.

These drugs are divided into two groups—the animal and the vegetable. They contain organic compounds or organic proximate principles, and inorganic substances as water, salts, gases, &c.

The Proximate Principles.—Are made up of elementary constituents, chiefly of oxygen, hydrogen, nitrogen, carbon and sulphur. Among these, carbon occupies the most conspicuous place. In the case of vegetable drugs, the organic proximate compounds are divided into soluble and insoluble groups.

THE INSOLUBLE GROUP—Consists of drugs which cannot be dissolved by ordinary solvents. They are made up of cell walls as cellulin, lignin, sclerogen, &c. Some of them are rendered soluble by special treatment : thus cellulin or cotton soaked in sulphuric acid or alkali is converted into a soluble product—gun cotton or pyroxylin. This pyroxylin when dissolved in ether forms soluble collodion. Lignin by a process of destructive distillation forms solid, liquid and gaseous products, as acetic acid, alcohol, creosote, phenol, tar, &c. Lignin and cellulin, if kept for a very long time, undergo natural decomposition and are changed into amber, coal tar and other products.

THE SOLUBLE GROUP.—The drugs in this group form a solution with ordinary solvents and include many valuable medicinal and dietetic substances. They include many organic principles of both the animal and vegetable groups, and contain albuminoid or protean bodies, vegetable alkaloids, camphors, carbo-hydrates, colouring matters, ferments, fats, glucosides, gums, neutral principles, organic acids, resins, waxes and also other principles as phenols, ketones, &c.

Albuminoids or Protean Bodies.—These are nitrogenous bodies and are of animal or vegetable origin. Both of them have the same chemical composition and contain oxygen, hydrogen, nitrogen, carbon and sulphur, but differ in their physical properties.

There are three principal types of albumens which are all soluble in water ; they coagulate by heat :—

1. PLANT OF VEGETABLE ALBUMEN.—It is found in all vegetable juices, but principally in the seeds. The principal derivatives of this type are legumin and gluten.
2. SERUM ALBUMEN is found in the blood serum ; the principal derivatives are fibrin casein, globulin, &c.
3. EGG ALBUMEN.—
   Their derivatives are mostly insoluble in water. Under the influence of gastric juice they are converted into soluble compounds called peptones which are easily absorbed, pass into the blood as serum albumens and are ultimately used up in building animal tissues.

The human organism requires albuminoids to supply every day's material waste and for repair and building up of tissues as much as, or perhaps more than, fat, carbo-hydrates, &c. Hence all substances containing albuminoids form the principal staple articles of food. An insufficient supply of such articles in the dietary of an individual produces emaciation, anæmia, prostration, and generally a low state of vitality rendering the individual prone to various diseases. On the other hand, an excess of such articles in the diet sometimes produces plethora and over-production of tissues if absorbed, and leads to congestion of internal organs, but more frequently it upsets digestion, and by increasing the waste materials in the system, produces uric acid and other diathesis.

Alkaloids.—They are also known as vegetable or organic alkalies. These are basic substances found in plants in combination with organic acids. They are chemical derivatives of ammonia in which one or more atoms of hydrogen are replaced by various radicles and when heated give off ammonia. These are divided into—

(*a*) Natural alkaloids or those which exist as such in nature, *e.g.*, morphine and caffeine.

(*b*) Artificial alkaloids or those prepared from natural alkaloids, *e.g.*, apomorphine.

SYNTHETICAL ALKALOIDS.—These are alkaloids which occur in nature and which are also synthetically prepared.

Characters.—Alkaloids exist as solids or colourless syrupy liquids, or oily volatile fluids, without any odour and of a bitter taste and alkaline reaction; insoluble in water, but soluble in alcohol; combine with acids to form soluble crystalline salts. They are decomposed by alkalies and alkaline carbonates. They are precipitated by iodine, chlorine, by picric, tannic and phosphoric acids.

SOLID ALKALOIDS.—These contain oxygen in addition to other elements, *e.g.*, atropine, caffeine, morphine, quinine, strychnine, &c. The volatile alkaloids are conine, nicotine, piperidine, sparteine, trimethylamine, &c. In these oxygen is generally absent.

Syrupy liquid alkaloids include lobeline, lupuline, muscarine, pelletierine, pilocarpine, &c.

Stearoptene Camphors.—The term camphor is erroneously applied to stearoptene. True camphors are secondary alcohols. Stearoptene camphors are volatile aromatic proximate principles which exist in plants. They are composed of carbon, hydrogen, and oxygen. They

are a product of oxidation of terpenes with which they are generally associated. Stearoptenes also exist in volatile oils.

Characters.—It is met with in a crystalline form or as an opaque or translucent waxy mass with penetrating odour and pungent taste. It floats on water in which it is sparingly soluble. It is freely soluble in alcohol, benzene, chloroform, ether and oils. The crystalline form is incorrectly known as camphor. Stearoptenes prepared from various essential oils include menthol (mint camphor), borneol (Borneo camphor), eucalyptol, thymol, &c.

Carbo-Hydrates—Hydrates of Carbon.—These are non-nitrogenous elementary principles in which the constituent elements exist in multiples. They are found in various plants and animals and are used extensively for dietetic purposes. They also possess therapeutic value and are used as demulcents, soothing lubricants, &c. They exist in various forms as amyloids, sugars, gums and pectin.

Amyloid Bodies.—These are substances with or without cellular structure and include cellulose, starch, dextrin, inulin, &c.

CELLULOSE.—It is the basis of all vegetable fibre and is isomeric with starch—exists in cotton and Swedish filter paper.

STARCH.—Amylum, a fecula found in the seed of Indian corn, wheat, barley, oats, arrowroot, sago, tapioca, rice (90 per cent.), Iceland moss, &c.

Characters.—Irregular angular masses or grains, white in colour, no odour, no taste, neutral reaction, easily reduced to powder, insoluble in cold water, alcohol and ether. With boiling water it forms a mucilage which gelatinizes on cooling. It is converted into grape sugar (or glucose) by the action of diastase, ptyalin and pancreatine, also by boiling it with a dilute mineral acid. With hot nitric acid it is converted into oxalic acid, and with cold fuming nitric acid it forms an explosive compound. The addition of a ferment converts it into alcohol and carbon dioxide.

DEXTRIN.—is formed by boiling starch with dilute mineral acids. It is an intermediate product in the conversion of starch into glucose. It is a transparent solid, soluble in water and dilute alcohol.

INULIN.—A principle resembling starch found in inula helenium, arnica, taraxacum and other plants. It has the same chemical composition as starch.

Sugars or Saccharine Substances.—They exist in both the animal and vegetable kingdoms. They are met with in different forms as—

1. CANE SUGAR—Obtained from sugarcane, sorghum, beet root, also from maize and other grasses.

2. SACCHARUM LACTIS, SUGAR OF MILK OR LACTOSE.—It is a constituent of human milk, a peculiar crystalline sugar soluble in water and obtained from the whey of cow's milk.

3. GLUCOSE OR DEXTROSE, LIVER SUGAR, DIABETIC SUGAR, ALSO CALLED STARCH SUGAR OR GRAPE SUGAR.—It is obtained from grapes or is artificially produced from cane sugar or from starch by boiling it with water and sulphuric acid. It is also formed from glucosides when decomposed by the action of diastase, a vegetable ferment found during the germination of grains. It occurs in yellowish-white masses, inodorous, of a sweet taste, soluble in water, sparingly so in alcohol.

4. LEVULOSE.—Fruit sugar known in commerce as diabetin. It accompanies grape sugar in fruits, honey, &c., sometimes in plants. It can be produced from inulin by dilute acids. It is a colourless uncrystallizable syrup, of a sweet taste, soluble in water. With nascent hydrogen it forms mannit, and with nitric acid it is oxidized into succinic, acetic and oxalic acids.

5. INOSIT OR PHASEO MANNIT.—It is a kind of sugar found in juices of some meats, green fruits *(Leguminosæ)*, asparagus, &c. It is very sweet, and is found in crystals. It does not ferment.

MOLASSES *(Syrupus fuscus)*, THERIACA OR TREACLE.—It is an uncrystallizable residue obtained during the process of refining sugar.

Characters.—Black, roapy, fermentable, of a peculiar odour and empyreumatic taste. Rum is obtained by distillation or fermentation of molasses, by evaporation. Crystallized treacle occurs as a gritty white powder without any odour, of a faint sweet taste, neutral reaction, soluble in cold water (1 in 6), boiling water (1 in 1), insoluble in alcohol, ether or chloroform. In the presence of albuminous matter, it undergoes lactic fermentation and forms lactic acid, carbon dioxide and alcohol.

Colouring Matters.—A group of bodies having different properties found chiefly in plants, sometimes in animals.

In plants as Carthamin—in safflower.
Chlorophyll—in all green parts of plants.
Curcumin—in turmeric.
Hæmatoxylin—in log wood.
In insects as Carmine—in the cochineal insect.

Ferments.—These are certain proximate principles which exist in both the animal and vegetable kingdoms; certain preparations of them are generally combined with other organic compounds. As therapeutic agents they are very useful in effecting peculiar changes in organic substances. True ferments have not yet been isolated. They are as follows :—

Bromelin contained in the juice of pineapple.
Diastase formed during the germination of seeds.
Emulsin occur in almonds.
Myrosin found in mustard seeds.
Pancreatin obtained from the pancreas.
Papayotin—papain contained in the juice of carica papaya.
Pepsin contained in the gastric juice.
Ptyalin—a ferment of animal saliva.

Vegetable Fat or Butter.—It is the concrete oil found in certain vegetables and resembles the butter obtained from the fat and milk of animals.

(Palm Species).

Theobroma cocao.	Butter of cocoa.
Cinnamomum verum or Zeylanicum.	Butter of cinnamon—cinnamon wax.
Myristica moschata.	Butter of nutmeg.
Cocos nucifera.	Butter of cocoanut.
Elæis Guiniensis.	Butter of palm oil.
Pentadesma butyracea.	Butter of tallow tree.
Kawan—solid oil of Java—	Galam butter.

(Bassia Species).

Bassia butyracea	Phulwara, choorie.
Bassia longifolia.	Illupu oil.
Stilingia sebifera.	Chinese butter.
Vateria indica.	Piney butter, Doopada solid oil.
Rhus succedaneum.	Japan wax.
Amygdala communis.	Almond butter.
Garcinia purpurea.	Kokum butter.

Garcinia pictoriá.	Gamboge butter.
Sterculia fœtida.	Tam-ghoorhy-yennai.
Laurus nobilis.	Butter of laurel.
Dolichos soja.	Japan butter.
Myristica sebifera.	Solid oil.
Damarara (butter tree).	Solid oil.
Salvadora persica.	Solid oil.
Vernonia Anthelmintica.	Solid oil.
Hydnocarpus inebrians.	Solid oil.
Terminalia bellerica.	Solid oil.

Glucosides.—These are active organic principles which exist in plants. They are neutral in character. By boiling with dilute acids or alkalies or by the action of ferments they are converted into glucose, chiefly dextrose, mannit, aldehydes, alcohols, phenols, &c.

Characters.—They are soluble in alcohol. All of them contain carbon, hydrogen and oxygen. A few of them in addition contain nitrogen. They are the most active of the principles found in the plants. They seldom exist alone and are generally associated with other active organic bodies, chiefly alkaloids, resins, oils, &c.

Examples.—

Adonidinum	Adonidin.....from Adonis vernalis.
Arbutinum	Arbutin .....from Berberry leaves.
Cathartic acid.....	.....from Senna leaves.
Colocynthinum ...	Colocynthin .....from Colocynth.
Convallamarinum..	Convallamarin ...from Convallaria majalis.
Digitalin .....from	Digitalis purpurea.
Digitoxin .....from	,,
Digitonin.....from	,,
Glycyrrhizinum—	Glycyrrhizin .....from Liquorice root.
Ipecacuanhic acid..	..... from Ipecacuanha.
Jalapinum.....	Jalapin or orizabin..from Jalap or scammony.
Salicinum .....or	Salicin ....from Willow bark.
Saponinum .....or	Saponin.....from Soap bark.
Strophanthinum or	Strophanthin .....from Strophanthus.
Tannin .....with	Caffetannic acid, Chino tannic acid and Querci tannic acid.

Gums.—These are semi-transparent, mucilaginous, amorphous vegetable substances found in plants. They contain (*a*) árabin, soluble constituent, as in gum arabic, (*b*) basorin, an insoluble constituent,

and which swells up, as in gum tragacanth, and (*c*) pectin, as in white oak. Gums form sticky preparations with water called mucilages and are precipitated by alcohol. When treated with nitric acid they yield mucic acid.

(Indian Gums.)

Acacia arabica.
Anogeissus latifolia.
Acacia catechu.
Feronia elephantum.
Swietenia mahogoni.
Pithecolobium dulce.
Melia Azadirachta.
Prosopis spicigera.
Anacardium occidentale.
Odina Wodier.
Bauhinia variegata.
Poinciana regia.
Cedrela Toona.
Albizzia lebbek.
Acacia farnesiana.
Albizzia procera.
Mangifera Indica.
Aleuritis moluccana.
Albizzia odoratissima.
Albizzia stipulata.
Bauhinia purpurea.

Neutral Principles, also known as Amaroids or Bitter Principles.—They exist in plants, are of various compositions and properties and have a bitter taste and neutral reaction. They do not form salts with alkalies.

Examples.—

Aloin.
Anemonin.
Cantharidin.
Chrysarobin.
Cotoin.
Elaterin.
Picrotoxin.
Piperin.
Santonin.
Quassin.

Organic Acids, otherwise known as Carbon Acids.—These exist both in plants and animals, forming salts with alkalies and alkaloid bases. They contain carbon, hydrogen, and oxygen.

Examples.—

Acetic acid.
Agaricic acid.
Angelic acid.
Benzoic acid.
Buyric acid.
Camphoric acid.
Cerotic acid.
Citric acid.
Formic acid.
Gallic acid.
Lactic acid.
Malic acid.
Meconic acid.
Oleic acid.
Oxalic acid.
Stearic acid.
Succinic acid.
Tannic acid.
Tartaric acid.

Resins.—These are proximate principles met with in some plants. They are amorphous, non-crystallizable solids with a peculiar fracture; insoluble in water, but soluble in alcohol, ether, chloroform, benzene, &c. They are complex bodies, acid in character, combining with alkalies to form soaps which are soluble in water. They are related to terpenes, by the oxidisation of which they are formed. Substances known as resins are divided into true resins, gum resins and oleo resins.

TRUE RESINS.—These are obtained by incisions made in the stems of certain trees or shrubs. Some contain benzoic or cinnamic acid.

True Resins.—

Amber.	Lac—gum lac.
Canarium bengalense.	Mastich.
Copal.	Pistachio lentiscus.
Dammar orientalis.	Sandarach.
Dragon's blood.	Shorea robusta.
Dyospyros glutinosa.	Vateria acuminata.
Guaiacum.	Vateria indica.

GUM RESINS—EMULSIVE GUM RESINS.—These are emulsive or milky exudations or natural mixtures of gum and resin. They may exist with or without volatile oil. When triturated in water the gummy matter is dissolved, leaving the resin suspended in the form of an emulsion.

Those with volatile oils are ammoniacum, asafœtida, frankincense, galbanum, tragacanth, myrrh, gardenia lucida. Those without volatile oil are gamboge, elastica, morella pictoria, scammony, olibanum, sagapapenum, sarcocolla, opoponax, &c.

OFFICIAL, PHARMACY OR PHARMACEUTICAL RESINS.—These are obtained from plants by precipitating the resinous principles. The alcoholic extract of such plants besides containing gum resins, contain all those principles which are soluble in alcohol. When water is added the resin and all those principles which are insoluble in water are precipitated.

Characters.—These are solid acid preparations found in transparent amber-coloured masses, hard, brittle and sticky to the touch, of faintly terebinthenate odour and taste, soluble in alcohol, benzene, chloroform, and ether. With alkalies they form resin soaps, become liquid when heated and gain solidity on cooling.

Some of them contain benzoic and cinnamic acids.

Examples.—

Resina jalapæ.
Resina podophylli.
Sumbul.
Resina Scammonii.
Elaterium—without benzoic acid.
Colophonium—without benzoic acid.
Draconis—with benzoic acid.
Copaiba
Resina.

Preparations of Resins.—Ceratum Resinæ—Basilicon ointment—contains resin, 53, yellow wax 15 and lard 50. Turpentine liniment contains 65 per cent. of resin. Emplastrum Resinæ—adhesive plaster—contains resin 14, lead plaster 80, yellow wax 6. Arnica, belladonna, and capsicum plasters. Cantharides cerate.

Oleoresinæ—Oleoresins.—These are liquid preparations or mixtures of natural volatile oils and resins. They contain oxygen with benzoic and cinnamic acids. They are extracted from vegetable substances by percolation with ether. The oil evaporates and the residue left is oleoresin.

Aspidii	1 in 10	Lupulini	1 in 2
Capsici	1 in 20	Peperis	1 in 20
Cubebæ	1 in 6	Zingiberis	1 in 15

Balsams are oleoresins and contain oxygen without benzoic or cinnamic acids, *e.g.*—

Balsam of Fir or Balm of Gelead.
Burgundy pitch.
Chloroxylon Swietenia.
Dipterocarpus alatus.
———— turbinatus.
Dryobalanops camphora.
Hardwickia pinnata.
Liquidambar altingia.
Liquidambar orientalis.
Melaleuca minor.
Mesua ferrea.
Odina Wodier.
Pix liquida.
Rhus succidanea.
Semicarpus Anacardium.
Storax.
Turpentine from Pinus patustris.

Fragrant Gum Resins.—These contain liquid balsam, a semi-liquid or solid vegetable product composed of resin or oleoresin, odorous principle and benzoic and cinnamic acids, or either, *e.g.*—

Balsam Peru.	Boswellia thurifera (Gunda beroza).
——— Tolu.	Calamus Draco.
Balsamodendron Mukul (Gugal)	Dracæna Draco.
——— Myrrha.	Mangifera indica.
——— Roxburghii.	Nagdavna.
——— pubescens.	Olibanum.
Benzoin.	Pterocarpus Draco.
Boswellia glabra.	Styrax Benzoin (Loban.)
——— serrata.	

Terminalia angustifolia.

Wax allied to Fat.—It is a compound body obtained from certain fruits as well as from certain insects. It differs from fat inasmuch as the latter, in addition to fatty acids, contains glyceryl.

Examples.—

From Myrica cerifera species	...	Myrtle wax.
,, Sugarcane	...	Sugarcane wax and cerosine.
,, Lingustrum lucidum	...	China white wax.
,, Stillingia sebifera	...	Vegetable tallow.
,, Honey bee	...	Cera.
,, Seichonofa coccus	...	Insect wax.
,, Rhus	...	Japanese wax.

CONDITIONS WHICH MAY MODIFY THE ACTION OF DRUGS.

Age.—The dose of any drug is uniform between ages of 20 and 60. For a child under one year the dose is $\frac{1}{24}$ of the dose for an adult. The age next birthday is to be divided by that age plus 12. Thus for a child 4 years old the dose will be $\frac{4}{4+12} = \frac{4}{16} = \frac{1}{4}$.

Old persons are very susceptible to large, or even to ordinary, doses, in whom the doses have usually to be diminished. Children are susceptible to anodynes, but can bear proportionately larger doses of purgatives, of belladonna, cod liver oil, arsenic and even chloral.

The rate of absorption of any drug varies with the mode of administration, the hypodermic being the quickest, the dose is ½ that by the mouth or ¼ that by the rectum. On a full stomach the absorption is slower than on an empty one.

Drugs in the form of solution are more quickly absorbed and require smaller doses than when given in powder or pill form.

Action of drugs may vary according to the idiosyncrasy, habitual use, and temperament of the individual. With some the odour of ipecacuanha and the smell of castor oil produce vomiting. Habit generally lessens the medicinal power, and large doses of arsenic, opium, and cathartics can be borne with impunity. Certain diseases as typhoid fever require large doses of stimulants and it can be tolerated without any alcoholic intoxication. In pneumonia large doses of tartar emetic can be borne without nausea.

Certain drugs taken for a long time produce cumulative effects and should be discontinued for some time or require cautious doses. Thus digitalis, mercury, and lead possess cumulative properties. The toxic effect may be due to slower elimination than absorption or to the elimination being suddenly arrested by the drug causing contraction of renal vessels.

Incompatibles.—The action of a drug or drugs may be changed by the drugs mixed to form a prescription, being of the nature of incompatibles.

In writing out a prescription care should be taken that the drugs composing it do not by interaction in any way destroy or modify their physiological action and thus form harmful or inert compounds. The incompatibilities may be chemical, pharmaceutical or therapeutical.

Chemical Incompatibles.—Many drugs undergo chemical changes or decomposition and form new compounds. Sometimes this result is purposely produced as in the preparation of black wash (lime, water and subchloride of mercury).

The following are instances of some of the principal chemical incompatibles :—

Acids with alkalies.

Alkaloidal salts in solution are precipitated by fixed alkalies, alkaline salts, tannic and gallic acids and other vegetable substances.

Certain salts produce insoluble alkaloidal compounds.

Oxides of fixed alkalies decompose alkaloidal and other metallic salts.

Cinchona with salts of iron.

Chloral with alkalies.

Corrosive sublimate with alkalies, alkaline carbonates, iodides and bromides.

Glucosides with free acids and emulsions.

Strychnine sulphate with potassium bromide.

Quinine sulphate with potassium acetate.

Iron with tannic and gallic acids.

Substances containing tannic or gallic acids precipitate albumen, gelatin and some metallic oxides.

Zinc sulphate with acetate of lead.

Some incompatibles form explosive compounds, especially when oxidisable substances are brought in contact with oxidising agents.

Chromic acid, nitric acid, potassium permanganate or potassium chlorate with glycerine.

Potassium chlorate with ferric salt.

Silver nitrate with creosote.

Silver oxide with extract of gentian.

Tincture of iodine with ammonia.

In some cases the trituration of solid drugs produces explosion, *e.g.*—

Calcium chloride with sulphur.

Catechu with potassium chlorate.

Calcium or sodium hypophosphite if triturated alone produces explosion.

In a few cases poisonous compounds result from admixture of many substances in solution, *e.g.*—

Potassium chlorate with potassium iodide.

Potassium chlorate with ferrum iodide.

Potassium cyanide with mercurous chloride.

Potassium cyanide with metallic hydrates, carbonates, subchlorides and subnitrates.

Pharmaceutical Incompatibles.—When two or more drugs are mixed together, precipitation or separation takes place, which, however, is not due to chemical changes, but to differences of solubility produced by such admixture, as when water or watery solution is added to an alcoholic solution of substances containing resin, the resin is precipitated. In some cases the precipitated resin is the real active principle when the incompatibility becomes dangerous, whereas in others it is inert, when it might be removed. In such cases it is necessary to use some suspending materials, as mucilage, before mixing them to prevent precipitation.

The following are some of the instances of pharmaceutical incompatibles :—

Alcoholic resinous fluid extracts or resinous tinctures when mixed with water or watery solutions.

An alcoholic preparation mixed with chloral and potassium bromide, causing chloral to float on the top.

A mixture of tincture of guaiacum with nitrous ether.

Fluid extracts, alcoholic tinctures, essential and fixed oils, with aqueous preparations.

Vegetable infusions with metallic salts.

Pepsine mixed with alkalies.

Salicylates with iron compounds.

Therapeutical Incompatibles and Physiological Antagonists.—When two drugs, each opposing the other in some one or all of their physiological actions or medicinal properties are given together, therapeutical incompatibility and physiological antagonism result. In some cases the antagonism is complete, as in belladonna and physostigma. In others it is only partial, as in calomel and opium. In some, again, a drug has some properties opposed to those of another, whereas other properties may be similar. When two such drugs are given together certain effects are intensified, whereas others are neutralized, as in belladonna and opium. Under their conjoint use the anodyne effect is intensified, and constipation, contraction of pupils, depression of respiration, &c. (the effects of opium) are counteracted by belladonna. Very often some incompatibles by the alteration of their chemical or physical characters are rendered inert or form insoluble compounds which could be removed from the body before they become absorbed into the blood or produce any toxic or poisonous effects upon the system.

The following are some of the therapeutical incompatibles :—

Aconite and atropine.	Bromal hydrate and Atropine.
Aconite and digitalin.	Chloral and picrotoxin.
Aconite and strychnine.	Chloral and physostigmine.
Alcohol and strychnine.	Chloral and strychnine.
Atropine and chloral.	Chloroform and amylnitrite.
Atropine and hydrocyanic acid.	Digitalin and muscarine.
	Digitalin and Aconitine.
Atropine and jaborandi.	Digitalin and saponin.
Atropine and muscarine.	Gelsemium and opium.
Atropine and morphine.	Gelsemium and atropine.
Atropine and pilocarpine.	Morphia and caffeine.
Atropine and phytolacine.	Morphia and chloroform.
Atropine and physostigmine.	Opium and gelsemium.
Atropine and quinine.	Opium and veratrum viride.

POISONS.

These are agents which when taken into the system either through the alimentary canal, hypodermically or by inhalation, act deleteriously upon the solids and fluids of the body and thus seriously injure health or destroy life.

Human beings are poisoned in various ways, *e.g.* (*a*) by animal stings, snake bites and bites of other venomous animals ; (*b*) by drugs—for criminal purposes drugs are generally selected which simulate symptoms of general diseases as cholera, tetanus, cerebral coma, &c., *e.g.*, arsenic, aconite, morphia, strychnine; (*c*) by substances generally used for suicidal purposes. These are such as could readily be obtained or purchased and commonly known to the laity or used for trade purposes, *e.g.*, opium, hydrocyanic acid, arsenic, carbonic acid gas, bleaching powder, &c.; and (*d*) by substances taken by accident, *e.g.*, tincture of opium mistaken for black draught, &c.

Antidotes.—Certain drugs and remedial measures are used to neutralize and counteract the effects of certain other drugs when taken in poisonous doses or producing violent symptoms of poisoning through idiosyncrasy even when taken in medicinal doses.

Antagonists—Affect or alter the physical or chemical characters of the poison and remove it from the body. They form with it an insoluble or inert chemical compound before it is absorbed or before it produces its toxic effects upon the system. In the case of vegetable and mineral poisons, antagonists do their work in the alimentary canal or in the respiratory passages. They include chemical or true antidotes and mechanical antidotes. Antidotes act by (*a*) removing

the poison from the system by purgatives, emetics, stomach pump or diuretics; (*b*) chemically or otherwise so altering their character as to render them inert or unfit for absorption; (*c*) physiologically neutralizing the effects if absorption has taken place.

Under their use the poison, though soluble and absorbable, is converted into an insoluble, non-absorbable and inert chemical compound. They include—

ACIDS.—Inorganic acids against diluted sulphuric acid, against salts of barium and against lead and lead poisoning; organic acids, acetic, citric and tartaric, against the alkalies and alkaline carbonates.

ALBUMEN.—It forms chemical compounds with metallic salts, corrosive alkalies, mineral acids, also with bromine, chlorine and iodine, anillin, creosote, and most of the alcoholic alkaloidal solutions. It is given against organic poisons, to be followed by an emetic.

AMMONIA WATER.—Inhalation against vapours of corrosive acids, nitro benzol, bromine, chlorine, hydrocyanic acid, &c.

AMMONIUM CARBONATE—Hypodermically against poisoned wounds by arrows.

CHARCOAL.—Fresh animal charcoal acts as a protective. It absorbs gases. Given against alkaloids, metallic salts, phosphorus, &c.

CHLORINE WATER.—Against alkaloids, vegetable and animal poisons; as a spray or inhalation against carbonic oxide, coal gas, or against ammonia and phosphoretted and sulphuretted hydrogen; and hydrocyanic acids and as a wash against snake bites and other poisoned wounds.

COPPER CARBONATE.—Against phophorus, to be followed by an emetic. It forms copper phosphide.

GELATIN.—given in poisoning by alum, iodine, bromine.

GLUTEN.—Against corrosive sublimate.

IRON.—Solution of hydrated sesquioxide, often combined with ammonia or caustic alkali against arsenic.

IODINE WITH POTASSIUM IODIDE.—(1 in 10) against alkaloids and their salts, against snake venom and vegetable poisons.

LIME.—Chalk, oyster shells, egg shells, conch ashes against mineral and vegetable acids as oxalic acid and oxalates.

MAGNESIA.—Against acids, acid salts, oxalic acid and oxalates, also against metallic salts of arsenic, mercury, and phosphorus.

MILK.—It contains albumen, casein, free alkali,&c.; like albumen it is an antidote against metallic salts, corrosive acids, alkalies and alkaline earths.

MUCILAGE OF GUM ACACIA.—As a protective against corrosive poisons.

OILS AND FATS.—Contraindicated in poisoning by phosphorus, carbolic acid, cantharis, copper salts, &c., are efficient against corrosive acids, alkalies, metallic oxides and salts chiefly used in the shape of melted butter, lard, almond oil, linseed oil, olive oil, teel seed oil and cotton seed oil.

POTASSIUM FERROCYANIDE.—Against copper salts.

POTASSIUM PERMANGANATE.—As an oxidising agent against all organic poisons before absorption has taken place, as morphine and strychnine salts, phosphorus and locally for snake bites.

SOAPSUDS.—A cupful given. Contraindicated in alkalies; generally efficient against corrosive acids, metallic salts of mercury, tin and zinc, and potassium bichromate.

SODIUM, MAGNESIUM AND POTASSIUM SALTS.—Contraindicated in poisoning by oxalic acid. Their carbonates and bicarbonates are given against poisonous metallic salts, such as zinc salts, also against iodine, bromine, and potassium bichromate; their sulphates against carbolic acid and salts of Barium and lead; their chlorides (common salt) with albumen against silver salts.

SODIUM HYPOSULPHITE.—Against calcium hypochlorite (bleaching powder).

STARCH.—As a paste against iodine, bromine, corrosive acids, corrosive sublimate, zinc and copper sulphates.

TANNIC ACID.—Combined with iodine, against alkaloids and their salts and against many metallic salts to be followed by cathartics and emetics. A ready and easy substitute for tannin is furnished by tea, coffee, nut galls, catechu, oak bark, cinchona, willow, rhatany, &c.

TURPENTINE.—Against phosphorus, organic acids, as acetic, citric, &c., against alkalies and alkaline carbonates.

Mechanical Antidotes.—These remove the poison from the body. They are used before or after the use of other antidotes. They act upon mineral or vegetable poisons by merely removing them from

the body by the action of the bowels, or by vomiting or through the respiratory passages. These include emetics, cathartics, the use of stomach pump, stomach washes, injections, poultices, &c.

Emetics should be avoided against irritant and arsenical poisoning, as vomiting is induced by the poisons themselves. They are contraindicated in corrosives, as they set up corrosion of the alimentary canal and even lead to abdominal inflammation. Common salt is contraindicated in poisoning by phosphorus, copper salts, carbolic acid, cantharides, &c. Emetics include sulphate of zinc, dose 20 to 30 grs.; apomorphine, hypodermically, dose gr. $\frac{1}{10}$; sulphate of copper, dose gr. 1 to 5; emetine, dose gr. $\frac{1}{4}$; tartar emetic, dose gr. 1; turpeth mineral, dose 1 dr. in a pint of hot water; cadmium sulphate, a teaspoonful in a pint of water; common salt, a teaspoonful; mustard, 4 drs.; olive oil, soapsuds, tobacco, snuff, ghee, tickling the fauces, &c.

Cathartics.—These remove the compounds formed by the poison in the intestines, and include 1. Castor Oil—Dose 1 to 2 ozs. It protects the mucous membrane and obstructs absorption of the poison. It is contraindicated in phosphorus, carbolic acid and copper salts and cantharides poisoning. 2. Croton Oil.—Dose 1 to 3 ms. 3. Magnesium Sulphate—Dose 1 to 2 ozs. Very effective in lead poisoning. 4. Senna—In narcotic poisoning. 5. Gamboge—In narcotic poisoning.

Stomach Pump and Stomach Syphon.—These are contraindicated in corrosion of the œsophagus or stomach or when the poison swallowed is in pieces or in a solid form. Washing of the stomach is useful against soluble poisons.

ORGANO-THERAPY—ANIMAL GLANDS, TISSUES AND THEIR PREPARATIONS.

Of late years, various organs of such animals as sheep, ox, &c., have been largely used more or less in a raw condition as remedial agents in the treatment of diseases and affections of allied organs in man. The theory that glands in addition to their ordinary secretions elaborate certain materials of unknown chemical composition which go into the blood and produce certain changes and affect distant parts of the organism has received support of late from the fact that the removal of certain glands affects other organs, *e.g.*, the removal of testicles and ovaries will cure hypertrophy of the prostate and osteomalacia respectively. Similarly, castrated individuals are known to grow fat and stout, and that stout people are known to possess atrophied testicles.

The human system is subject to various diseases, and some of these are due to a deficient and perverted action of various organs of the body, whereby the product of those organs which is essential to the preservation of health is not properly supplied. To meet this deficiency, corresponding healthy organs of animals are therapeutically used with a view to supply this deficiency or to alter the morbid change. Many of these preparations are still on their trial, but the results obtained from the use of thyroid gland in goitre give hopes of a good future for other remedies of this class.

A majority of these preparations contain leucomaines, extractives, and other substances which have a high physiological value. Some of the glands are, however, toxic in their effects. Physiologically considered, these preparations are very useful alteratives and have a powerful influence on the motor fibres of the arterioles. As the preparation of these organs for medicinal use require great care and skill, it has been the practice to rely upon those prepared by well-known firms of chemists only. They are generally met with in the form of tabloids. Hence no attempt has been made in this work to give their mode of preparation. Only their therapeutical uses and the dosage will be given in connection with their descriptions.

The following are the preparations of this class generally used :—

Red Bone-marrow from marrow of the bones of ox and sheep.

Used as glycerine extract.—Dose ½ to 1 dr., to be given with milk or wine. *Tabloids.*—Dose 1½ gr. each. *Desiccated powder.*—Dose 1 to 3 grs.

Preparation.—Carnogen containing red bone marrow and hæmoglobin. Dose 1 to 2 grs.

Physiological Actions.—Hæmatinic and tonic. It increases hæmoglobin in the blood and stimulates the production of blood cells.

Therapeutic uses.—Given in general debility, chlorosis, anæmia, pernicious anæmia, scurvy, hæmatemesis, hæmophilia, lymphadenoma, leukæmia and rickets ; also in convalescence from acute bone diseases and in osteo-arthritis. It is used in some cases as a food substitute for cod liver oil.

Virol.—A combination of red bone marrow, malt extract, eggs, and lime juice.

Characters.—A thick syrupy liquid, resembling honey in appearance and consistence. Taste delicious. Dose a teaspoonful.

Actions and uses.—Virol is hæmatinic tonic and nourishing, superior to cod liver oil. Given in rickets, in imperfect and slow growth of bones, and in gastric ulcer as an easily digestible food.

Cardin.—An extract prepared from the heart muscle of the bullock, by means of glycerine, boric acid, and alcohol.

Physiological Actions.—Cardiac stimulant, tonic and diuretic. It increases the force and fulness of the pulse ; under its use there is an increase in the number of blood corpuscles and also in the quantity of urine. *Therapeutics.*—Given in nervous debility, anæmia, chlorosis, &c.

Mammary Gland Extract.—Met with in the form of tablets, 3 grs. in each. Given with advantage in amenorrhœa, atrophy of the breasts and deficient lactation ; also in menorrhagia, dysmenorrhœa and fibroma, carcinoma and other tumours of the uterus.

Cerebrin and Myelin—Medullin.—A glycerine extract of the brain and spinal cord. To prepare it, digest the cord in a mixture of glycerine, alcohol and boracic acid. Used also as desiccated powder.

Tablets.—Dose 5 grs. in each.

Actions and uses.—Nervine tonic, given in primary dementia, neurasthenia, locomotor ataxy, paraplegia, &c.

Nuclein.—Is a proteid substance and contains a large proportion of phosphorus. In the form of nucleinic acid it is a chief chemical constituent of cell nuclei. Found in various animal and vegetable tissues. Vegetable nuclein is prepared from vegetable yeast cells. Animal nuclein is prepared from animal tissues and glands, as the liver, spleen, thyroid and thymus glands, &c. Proto nuclein is a preparation obtained from the tissues and glands combined.

Characters.—Nuclein is insoluble in dilute acids, but soluble in dilute alkalies. Vegetable or yeast nuclein contains 1 p.c. of nucleinic acid. Dose 30 ms. hypodermically. As tabloids—dose 1 gr. in each ; powder—dose 3 grs.

Actions and uses.—Antiseptic and bactericide. It increases leucocytes in the blood. It destroys morbid products which may not have been eliminated. As a bactericide it destroys microbes or resists their invasion. It assists peptic digestion. Hypodermically injected in health it increases the leucocytes. Hence given in diphtheria, suppurative tonsillitis and other suppurative disorders, chronic bronchial catarrh, chronic rheumatism, chronic malaria, tuberculosis, &c., also in typhoid fever and in convalescence from acute diseases.

Orchidin.—Orchitic extract—didymin, spermin, sequardin, testin, testiculin, orchitic fluid. A glycerine extract of the testicular substance.

Constituents.—It contains four active principles—spermine, phosphorized albumens, lecithin known as phosphorized fat and nuclein. Spermine exists in the form of a phosphate; it is also found in the thyroid and thymus glands, pancreas, spleen, ovaries and blood.

Liquor Testicularis—or Orchitic Fluid. Dose, internally, 15 to 30 ms.; hypodermically, 5 to 15 ms.

Actions and uses.—Restorative, tonic, cardiac, emmenagogue and stimulant. The action is believed to be due to the presence of a ferment in the orchitic fluid. It excites the process of oxidation. It increases the oxyhæmoglobin in the blood, stimulates the heart, exalts the tone of the vessels, and promotes oxygenation of waste products. It increases the amount of urea and lessens the amount of phosphoric acid in the urine. It is used in constitutional diseases due to defective nutrition of the organs as anæmia, tuberculosis and diabetes; as an emmenagogue in uterine disorders, and as a nervine tonic in neuralgia, epilepsy, chorea, general paralysis, locomotor ataxy and other nervous disorders. In perverted sexual functions, impotence, senile decay and in various forms of cachexia it is given with benefit.

Ovarian Extract.—

Part used.—Dried ovarian substance.

Constituents.—It consists mainly of proteids and an active principle allied to spermine.

Used as ovarian extract; dose, 5 to 10 grs.; desiccated powder tablet 5 grs. in each.

Actions and uses.—Alterative and astringent, given in amenorrhœa dysmenorrhœa, menorrhagia, chlorosis, &c. In climacteric affections of the skin as eczema, rosacia, prurigo, herpetic eruptions and seborrhœa; in the constitutional disorders re-appearing with the climacteric changes as epilepsy, gout, psoriasis, and in troublesome nervous symptoms following the removal of the ovaries, it is used with good results.

Cerebrinin—Protogon.—A glycerine extract of the grey matter of the brain of sheep or ox. To obtain it, digest the grey matter in glycerine and then add solution of common salt. It is an albuminous liquid containing glycerine, hypophosphorus acid, phosphates, lecithin

and cerebrin. Hypophosphorus acid is found in great abundance in the blood, nerve structure, cerebellum and also in the cerebrum, chiefly in the anterior lobes. Dose 3 to 20 ms.

Used hypodermically or as tabloids 5 grs. in each.

Actions and uses.—Nervine tonic and sedative. It is given hypodermically in tetanus and in strychnine poisoning. It is given with benefit in low nervous conditions as locomotor ataxy, tabes, mesenterica, neurasthenia, paralysis, melancholia, chorea, nymphomania ; also in insomnia, chronic alcoholism and in hysteria, epilepsy, tubercular and syphilitic diseases, in perverted sexual habits and extreme emaciation.

The following formula is found useful in diarrhœa and night sweats :—

Protogin 6 drs., cod liver oil 24 drs., eucalyptus oil 2 drs., alcohol 8 drs.—mix, dose 2 drs.

Supra Renal Gland Extract (Adrenal Extract).—The supra renal glands consist of the cortex or capsule and the medulla. The cortical substance is supposed to have the antagonistic power of neutralizing snake poison. The gland is used as adrenal extract. Dose 5 to 15 grs. Desiccated powder—tablets 3 grs. in each.

Physiological Actions.—Local astringent and hæmostatic ; internally alterative and cardiac tonic. It acts on the vascular system, increasing the blood pressure by contraction of the arterioles.

Therapeutic uses.—Given in acute maniacal excitement. In Addison's disease it lessens discoloration of the skin and improves the general health. It is also given in diabetes insipidus, in neurasthenia, goitre and in anæmia. Locally its solution is used in conjunctivitis, keratitis, iritis, &c. The solution with cocaine (2 to 1) is used as an injection in affections of the ear, nose, larynx and pharynx, also in gonorrhœa, cystitis, leucorrhœa, &c.

Splenic or Spleen Fluid Extract.—Part used is the spleen substance. Dose of the extract 1 to 2 drs. Used as desiccated powder. Dose 5 gr. ; tablets 3 grs. in each.

Actions and uses.—Tonic, alterative, bactericide and stimulant. Given in various disorders of the blood, in malarial cachexia, and lymphadenoma. In enlargement of the spleen its use is often

followed by diminution in the size of the spleen. It is also given in Grave's disease, anæmia, chlorosis, rickets and phthisis; also in cases of recent insanity, psychosis, mental exhaustion and melancholia.

Spermine Hydrochloride—Piperazine.—A synthetical preparation of a base allied to the base found in the spermatic fluid, thyroid gland, spleen, ovaries and blood, in combination with phosphoric acid.

Actions and uses.—A peculiar nervine stimulant. It revives vital energy and is used in nervous diseases as neurasthenia, hysteria, epilepsy, angina, locomotor ataxy, asthma, tuberculosis, and senile marasmus.

Remarks.—Must be kept in hermetically sealed tubes.

Thyroid Gland Extract.—Prepared from the dried thyroid gland substance, minced, dried and exhausted of fat by means of petroleum ether.

Constituents.—Iodothyrin or thyroiodin, and proteids (albumen and globulin). These are found in the colloid secretion of the follicles of the gland.

Iodothyrin.—An active principle freed from albuminoid bodies. It contains a definite amount of iodine, ·03 p.c. It also contains nitrogen, sulphur and phosphorus.

Characters.—A white powder. Of the tastes of milk sugar. Soluble in alkaline solutions. Alcohol removes iodine from it. One part of it is equal to one part of fresh thyroid gland. Used in compressed tablets. Dose 1-60th gr., gradually increased.

Thyroideum Siccum B. P.—Dry Thyroid.—A light dull brown powder of the dried gland. It has a meat-like odour and taste. Dose gr. 3 to 10. Used as thyroid capsules, tablets or cachets.

Liquor Thyroidei B. P.—Thyroid Solution.—A pinkish turbid liquid. 100 minims represent one gland. Used hypodermically and by the mouth. Dose m 5 to 15.

Physiological Actions.—Alterative, nervine tonic, and antiaphrodisiac. It is supposed to have also a mechanical action, *viz.*, protection of the brain from suddenly becoming engorged with blood

either by the increased action of the heart or by congestion of the circulation. Its therapeutic action depends upon the absorption of certain iodized products of the gland.

Therapeutics.—It is given in myxœdema, a disease due to the absence or inadequacy of the gland either as a result of injury or the disease of the gland. Removal of the gland has proved fatal to animals, but life can be saved by engrafting a portion of the gland in other situations or by the intravenous injection of the thyroid extract. Raw gland is equally efficacious as the dry powder. It is given with benefit in cretinisin, congenital myxœdema, goitre, imbecility and arrested mental development in children, insanity due to masturbation, hysteria, syphilis, &c.; of late it is extensively used for the reduction of obesity and in rickets. It has also been found useful in uterine hæmorrhages, especially those due to fibroid tumours, carcinoma and other causes. In certain skin diseases such as psoriasis, eczema, keloid, ichthyosis, pityriasis rubra, lupus and lichens; also in alopecia it is given with benefit. As anaphrodisiac it acts by relieving congestion of the urinary and sexual organs when affected by prostatitis. It should not be given to phthisical patients, nor to those suffering from wasting diseases.

As an emmenagogue it is given in amenorrhœa. It is also given in hemicrania, and in angina pectoris with good results. In lactation, its beneficial use as a galactagogue is worthy of trial. It has been successfully used in cases of obstinate fractures to promote consolidation.

Thymus Gland Extract.—Thymus gland is active only during the developmental period. The gland substance itself is used as dried extract. Dose 5 to 30 grs. Used as desiccated powder. Tabloid 5 grs. in each.

Actions and uses.—Alterative, stimulant and tonic; used with benefit in Grave's disease, pernicious anæmia and other debilitating disorders due to defective development as rickets, pseudo-hypertrophic paralysis, &c.; also in leucocythemia and hæmophylia.

SERO-THERAPY—BACTERIO-THERAPY.

In this is included a group of remedial agents of a curative and preventive or prophylactic character. The results obtained from them so far are very encouraging and they give promise of a far greater usefulness in the future. They consist of blood serums of immunized animals or bacterial products, possessing peculiar undiscovered substances called antitoxins and used for the cure of certain diseases of an infectious character and of a bacterial origin. As the preparation of these

serums requires a laboratory specially equipped for the purpose, a detailed description of their preparations cannot be given here. Moreover, the preparations are of various strengths, and full details of doses and the mode of their administration accompany the tubes containing the serum.

A long series of bacteriological investigations has shown that when an animal is inoculated with gradually increasing doses of a virus, toxic cultures, bacteria or bacterial products of a particular disease, its blood serum becomes after a certain stage immunized against the effects of further inoculations, and it becomes proof against the germs of that particular disease. The serum of such animals when injected acts as a curative or prophylactic against the attack of that disease. The serums thus rendered immune are with safety and advantage used in such acute infectious diseases as cholera, diphtheria, erysipelas, plague, pneumonia, syphilis, typhoid fever, tetanus, and tuberculosis.

Antiseptic precautions to be observed in the use of serum—

(1). The skin round the site of the injection should be sterilized by first rubbing it with soap and warm water, next with ether to remove any grease that may exist, and finally with a solution (1 in 20) of carbolic acid.

(2). The syringe should be sterilized by boiling it for a few minutes in water and soaking it in a solution (1 in 20) of carbolic acid.

(3). Injection should be made under the skin, any part not liable to much movement should be preferred.

(4). The serum should be very clear and pure.

Diphtheria Serum, Diphtheria Antitoxin—Antidiphtherin, Antidiphtheritic Serum.—It has preventive as well as curative properties. It is prepared from the blood of horses that have been subjected to repeated inoculations of the poison of diphtheria. Behring obtained diphtheria bacilli from a patient, cultivated them in broth, and injected subcutaneously in gradually increasing doses in horses, cows, sheep and goats until they were rendered incapable of taking the disease. In the animal thus immunized the antitoxic effect was retained for a long time by occasional injections of the poison.

Action and uses.—Used in diphtheria, œzena, and laryngeal croup. In favourable cases it lowers the temperature, induces sweating, removes signs of distress, and diminishes fever.

The diphtheritic membrane clears away, and laryngeal symptoms are relieved, thus avoiding the necessity for tracheotomy. It is, however, found necessary to continue the local antiseptic treatment of the throat during the serum treatment. To be successful the treatment should be commenced early. It is more useful in the fibrinous form of the disease than in the septic form.

Rabies Antitoxin – Anti-rabic Virus.—Though rabies has been regarded as of microbic origin, the particular germ has not yet been discovered. The specific virus of the disease is found to be most abundant in the spinal cord of rabid animals.

Pasteur inoculated with the virus of rabies healthy animals and produced characteristic symptoms of the disease. He also found that the virus taken from a cord dried for a shorter period was more virulent than that obtained from a cord dried for a longer period. By inoculating an animal from day to day with the virus of increasing virulence obtained in this manner, he found that after a certain stage the animal became perfectly immune against the virus of rabies in any form. On these data he based the anti-rabic treatment of hydrophobia in man. For this purpose he used an emulsion of the spinal cord of rabbits who died of rabies artificially produced. The results obtained have been so satisfactory that almost all civilized States have established Pasteur institutes in their territories. As this treatment is more of the nature of a prophylactic against rabies, and as the only available period is the time between the date of the bite and the onset of the symptoms, to be successful it should be begun immediately after the receipt of the bite. The treatment usually extends over a fortnight, and consists of 2 to 6 inoculations a day.

Antivenene or Antivenomous Serum.—This serum neutralizes the poison of various species of serpents, specially of cobra and rattle-snake ; also of scorpions, &c. It is obtained by immunizing horses with increasing doses of a serpent poison, especially cobra poison. The serum of the animal thus immunized possesses antidotal properties against the bites of poisonous snakes.

Streptococcus Antitoxin.—This serum is obtained from a horse who has been immunized by inoculating it with cultures of streptococcus which have been passed through a series of animals by which process the virulence is increased.

Used in cases of erysipelas, puerperal fever, septicæmia and pyæmia, also in scarlet fever. The use of this serum requires great care and watching, as fatal results due to its use have been reported.

Syphilis Antitoxin.—It has been found that certain animals such as dogs, lambs, &c., are little affected by the syphilitic poison. The resistance of such animals to this poison is considerably increased when the blood serum from man in the active stage of syphilis is injected into them. The serum of animals so treated has been tried with a certain amount of success in the treatment of syphilis in man, especially in the tertiary forms, as tertiary ulcerations, &c.

Tetanus Antitoxin.—Tetanus toxin has been separated in a crystalline form, and the disease is produced in animals by injecting that substance. The serum of animals inoculated with tetanus toxin has an immunizing power, and has been used with success in the treatment of tetanus. As, however, the disease is not diagnosed till after the nervous system is involved, this remedy cannot produce its full effects. It is, however, used as a prophylactic in persons exposed to the chances of tetanus infection, as in lacerated wounds, soiled with clay, mud, &c., the bacilli being found also in the soil. A solid form of this antitoxin is also obtainable which is reported to keep well, being not affected by heat or damp. The ordinary treatment, *vis.*, cauterization and removal of the affected part locally and sedatives internally, cannot be dispensed with during the serum treatment.

Tuberculosis Antitoxin.—Known as Maragliano's serum. It is obtained from the horse, ass, dog or goat immunized with tuberculin or toxins of bacillus tuberculosis. It should be distinguished from Koch's tuberculin, which is an extract of the products of the cultures of bacillus tuberculosis and not a serum. Used in the earlier stages of tuberculosis. Under its use the local signs disappear, the weight increases and the bacilli also disappear. The treatment should be continued for a long time. It is often necessary to supplement injections of serum with the use of antiseptic vaporizers or inhalations and with the disinfection of the mouth and throat with antiseptic gargles.

Typhoid Antitoxin—Antityphoid Serum.—This serum is obtained from the sheep immunized with broth cultures of typhoid bacilli. It is found useful in a few cases of typhoid fever in man. In lower animals its efficacy is decided.

Toxins.—Such infectious or specific diseases as anthrax, cholera, diphtheria, erysipelas, glanders, plague, pneumonia, tuberculosis, typhoid fever, &c., are due to pathogenic germs.

These specific germs in suitable media produce toxic substances to which these specific diseases are due, but they also produce certain other substances which are inimical to their own existence. It is on this theory that toxins are used as remedial agents in the specific diseases of microbic origin. The toxins in many cases are of albuminous nature and are termed tox albumens.

Antiphthisin.—A derivative of tuberculin claimed to be free from the toxic principles of tuberculin. It is reported to have given good results in the initial stage of pure tuberculosis. It is said that under its use the number of germs becomes less, and they show signs of degeneration, the fever decreases, dulness of the chest diminishes, harsh breathing is replaced by vesicular respiration, cough becomes less troublesome, and sputum becomes less purulent. In fact, the lung capacity is increased and the patient increases in weight.

Cholera Toxin.—Professor Haffkine has introduced the toxin which is found to possess a remarkable protective power against cholera.

The treatment consists in inoculating a person with a weak virus followed in 4 or 5 days by one of greater virulence. The intensity of this virus is reduced by passing air and oxygen over a culture of comma bacillus, on agar at a high temperature. The results obtained have been very satisfactory and prove that the toxin has a very marked effect in protecting people against cholera.

Erysipelas and Prodigiosus Toxins.—It is sometimes observed that when patients affected with malignant growths suffered from an inter-current attack of erysipelas, the growth disappeared. Guided by this experience, erysipelas was artificially produced in such patients as a remedial measure by inoculating them with pure cultures of streptococcus erysipelatus. The results were, however, not very encouraging. Subsequently a mixture of the toxins of streptococcus erysipelatus and bacillus prodigiosus was tried and found to give better and more encouraging results. In the preparation of these toxins the germs are destroyed by heat. Sarcomata are more influenced than carcinomata.

Plague Prophylactic.—Professor Haffkine has discovered a prophylactic against plague. It is prepared from plague bacilli,

cultivated in a fluid medium, which is after a certain stage heated till all the bacilli are killed. This fluid containing the dead bacilli and their products is then further sterilized by carbolic acid. The dose varies with different brews. It is a remedy of decided prophylactic power against plague, and the results so far have been very encouraging. If resorted to early, the immunity against attacks is very great. Amongst those attacked in spite of the prophylactic, the course of the disease is favourably modified, and the percentage of mortality is reduced. The immunity is, however, of a short duration—about six months. The inoculation requires to be given with caution in cases of heart disease, struma, syphilitic cachexia, diabetes and in acute diseases.

Tuberculin—Koch's Tuberculin.—An extract of the products of pure cultures of the tubercle bacillus made in glycerine and water. It has fallen into disuse, as it often disintegrates the tuberculous deposits even when they are in a quiescent condition, with the result that they are disseminated throughout the body, forming new centres of infection. Besides, the immediate reaction of the inoculation is very severe, producing in many cases serious symptoms. However, in a few well selected cases the treatment may prove useful. It is, however, useful for diagnosing tuberculosis in animals, and in the preparation of tuberculosis antitoxin.

THE MODE OF PREPARATION OR FORMS IN WHICH MEDICINES CAN BE USED.

In former times medicine was administered, as far as possible, in very crude forms. In civilized countries, with the advance of medical science, pharmacy has been brought to a high state of perfection, and the most violent poisons and the most nauseous drugs can be administered in doses and forms which could never have been dreamt of before. But in cases of the less progressive people like the Hindus, the Musulmans and the Chinese, among whom medical science has been allowed to remain stationary, there has been no improvement in that direction. Drugs are sometimes given in very crude form without any regard to the bulk or to their nauseous taste or smell. Again, owing to the want of knowledge of the therapeutical actions of drugs, a large number of ingredients are employed in a prescription, some of them being of contrary physiological actions, and in some cases of the nature of incompatibles. As an example, it may be mentioned that an electuary known among the Hindus as *Katânâ batrisâ* contains 32 drugs. Another

preparation called *Bâla goli* contains about 50 drugs, a large number being carminatives and narcotics, especially opium. Similarly the well-known preparation, called *Triâk farûk*, contains 50 drugs.

Drugs are administered mostly in liquid or solid forms.

Liquids.—Among the liquid preparations are included—

1. Aqueous preparations, *viz.*, decoctions, infusions, solutions, waters, &c.
2. Those containing viscid substances as emulsions, honeys, mucilages, mixtures, syrups.
3. Alcoholic preparations such as elixirs, fluid extracts, spirits, tinctures, wines.
4. Acetous preparation such as vinegar.
5. Ethereal preparations. These are ethereal tinctures, collodions, liquors.
6. Oleaginous preparations such as liniments, oleates, &c.

Solid Preparations.—These include abstracts, cerates, confections, extracts, masses, ointments, papers, pills, plasters, powders, resins, suppositories, Trochisci. Below, in an alphabetic order, will be found a brief description of these preparations.

Abstracta—Abstracts.—A class of preparations consisting of dry powdered extracts. They are made by exhausting crude drugs with alcohol, recovering the same, and incorporating the residue with milk sugar. They are twice the strength of crude drugs, or about double the strength of the corresponding fluid extracts. (*See* Index.)

Aceta, Vinegars.—Active principles of certain drugs, macerated in dilute acetic acid or vinegar as a vehicle.

Antrophores.—The spiral spring bougies coated with gelatine. They contain thalline, cocaine, iodoform, zinc sulphate, tannin silver nitrate, bismuth subnitrate, &c. ; serviceable in gonorrhœa.

Ashes.—Residue left after an organic substance has been raised to a strong heat. Among the natives, however, residue left after a metal has been raised to a strong heat is also called ash, in which case the residue is either the reduced metal or oxide or some other compound of the same.

Vernacular—Guz.—*Khâk, Râkh, bhasm, khar* ; Hind.—*Râkh* ; Pers.—*Khâka* ; Sans.—*Bhashma*; Tam.—*Tiroonoot oondi, Sambool* ; Tel.—*Boodida, Vibudi.* Khar also means salts.

Animal Ashes.—These are prepared from bones, horns, shells, pearls, teeth, &c. To obtain ash apply heat to any one of these substances till it becomes red hot; soak it in lime juice and heat again. Repeat this process several times or till it becomes calcined and can be powdered. These ashes mostly contain phosphates; *e.g.*, sambarsing (deer's horn), *moti* (pearls), *cowries* (shell), eggshell, *purvâlûn*, oyster shell, *samuderphen*, &c.

Vegetable Ashes.—They consist mostly of salts of alkalies or alkaline earths. The natives prepare the ash in the following way:—Reduce to thin pieces dry roots, stems, leaves, &c., put them into an open-mouthed earthen vessel, cover the opening with a piece of cloth, and plaster it outside with cow's dung; then apply heat from a fire till the whole becomes completely charred. Powder it when cold. To purify—Boil the coarse powder with water for 2 or 3 hours and filter. The insoluble substances will precipitate, and evaporate the filtrate.

Mineral Ashes.—The crude mineral is subjected to what is called a process of purification and finally reduced to a fine powder; *e.g.*, arsenic, copper and its salts, gold, iron, lead, mercury, silver, tin, and zinc.

Bolus and Granules or Parvules—are terms used for pill masses, differing only in size, the former larger and the latter smaller than an ordinary pill. (*See* Index.)

Bougies—*Kâkro* (Hind.).—These are small solid cylinders or pencils made of gelatine, wax, or cocoa butter and impregnated with various medicinal substances. They are locally inserted and used in affections of the nares, urethra, vagina and rectum; also in fistulæ and sinuses. (*See* Index.)

Cachets or Wafers.—An agreeable and fashionable mode of administering nauseous or insoluble drug or drugs, or ordinary drugs to fastidious patients. These are prepared by placing the drugs into the hollow of two pieces of specially prepared wafer papers. The edges of the two are first moistened with water and then swallowed without unfolding. (*See* Index.)

Capsules and Perles.—Modes of administering nauseous powders, oils and bitter liquid drugs to fastidious patients. They consist of two hollow globules or tubes or cases made of gelatine or some other substance closed at one end and telescoping into one another. They are of various shapes and sizes. (*See* Index.)

Cataplasmata.—Poultices—*Lepadi* (Guz.). These are soft and pasty hot masses applied to the skin to supply moisture and warmth, to relieve pain and relax tissues: if applied early, they reduce inflammation of the tissues under the skin. They assist suppuration or evacuation of pus when the suppuration has set in, as in boils, buboes, abscesses, &c. They are also applied to open wounds to prevent fetor of the discharges and to promote healthy condition of the tissues. They are medicated by adding anodynes, counter-irritants or disinfectants. They are prepared by boiling linseed meal, charcoal powder, flour of various grains, or bread in milk or water, till the mass is reduced to the consistence of butter. They are usually applied as hot as could be borne, and are generally one inch thick. They are frequently changed when cold.

Among the natives certain fruits, corms or rhizomes are embedded in hot ashes and applied as poultices. (*See* Index.)

Cerata—Cerates.—These are ointment-like preparations, but of firmer consistence. They all contain wax and do not melt at body temperature. Used externally, *e.g.*, ceratum cantharides, ceratum resinæ, &c.

Charta—Papers.—They are strips of paper either coated only on one side as *Charta sinapis*, or impregnated and saturated with drugs as *Charta nitratis*, &c. They are used as plasters, vesicants or counter-irritants and as inhalation of the fumes while burning.

Collodia—Collodions.—These are liquid preparations for external application containing drugs dissolved in a solution of pyroxylin in ether and alcohol. When applied the ether and alcohol evaporate, leaving a film of the collodion on the skin. (*See* Index.)

Collunaria—Nasal Douches.—These are solutions, containing antiseptic agents and also astringents in water or water and glycerine combined, for washing out the nasal cavities.

COLLUNARIUM	Acidi carbolici 2 grs. in 1 oz.
,,	Sodii bicarb 5 grs. in 1 oz.
,,	Boracis 5 grs. in 1 oz.
,,	Aluminis 5 grs. in 1 oz.
,,	Potassii permang. liquor 6 ms. in 1 oz.
,,	Quininæ ½ gr. in 1 oz.
,,	Zinci sulphatis ½ gr. in 1 oz.
,,	Zinci sulpho carbolatis 2 grs. in 1 oz.

Collyrium.—An eye wash or a lotion for the eye, generally of a mildly astringent character. Collyrium Adstringens Luteum.—Ammonium chloride 5, zinc sulphate 12·5, water 2,000. Dissolve and add camphor 4, dilute spirit 200, and saffron 7. Digest and filter.

Confections—Electuaries.—Ver. *Pâkha* (Hind.) These are sweet and pasty masses of nauseous and disagreeable drugs with sugar and honey as their base to render them agreeable for administration as also to preserve them from decomposition. Some of these confections are rolled into round boluses and used extensively under the name of "*Ladoos*" (balls). (*See* Index.)

Cosminol—Cosmine-oleum Petrolei Alba.—A mixture of pure neutral hydrocarbons of the marsh-gas series, concentrated and purified without the use of acids or alkalies. Obtained from the residue left as a deposit in tanks containing petroleum.

Characters.—An oily yellowish liquid or a homogeneous non-crystaline jelly. Does not become rancid when long kept, without any odour or taste. It has no chemical action. Substances sparingly soluble in glycerine, water or spirit, are soluble in cosminol. Those which are soluble in chloroform, ether, benzin, fixed and volatile oils and oleic acid are also readily dissolved in cosminol. Pure alkaloids which are soluble in ether and chloroform, are also soluble in cosminol.

Actions and uses.—Soothing and emollient to the mucous membranes. Its chief use is as a medium for the exhibition of drugs in solutions. It is used as an application, as a spray by the atomizer to the nose, larynx and pharynx, as an ointment, and as an injection. (*See* Index.)

Decoctions.—It is a solution of active constituents of a drug prepared by boiling it with water. In this process, however, the active constituents are generally injured, and therefore these preparations are not much in vogue. (*See* Index.)

Haustus—a Draught.—It is a mixture prepared in accordance with a prescription to be taken in a single dose, *e.g.*—Black draught, effervescent draught.

Elixirs.—These are liquid preparations containing small quantities of active drugs dissolved in alcohol and water, and sweetened and flavoured with aromatics. (*See* Index.)

Emulsions.—These are liquid preparations containing insoluble powders, oils, &c., suspended by some sticky substance such as gum. Some emulsions are natural products, as milk, yolk of egg, milky juices of plants, &c.

Different substances used for emulsification are—Mucilage of acacia —for oils and resins ; mucilage of tragacanth—for oils and resins ; yolk of eggs—for oils, chloroform, and glycerine ; liquor potassæ—for oils ; tincture of senega—for fats and oils ; tincture of quillaja—for oils ; milk—for scammony ; soap—for oil of turpentine ; Scot's Emulsion contains—Codliver oil 44 p.c., hypophosphite of lime 6 grs. to 1 oz., hypophosphite of soda 39 gr. to 1 oz., glycerene 16 p.c.

Emplastra—Plasters.—Ver. *Pattee* (Guz.) These are preparations for external use only, consisting of a solid base of an oleaginous character, harder and more tenacious than ointments, and containing drugs either dissolved or chemically combined. They are generally spread on a piece of cloth, leather or other suitable material, and the piece so treated is applied to the affected part.

In native practice, plasters are applied over abscesses, boils, inflammatory swellings, tumours, even on malignant and other growths. (*See* Index.)

Extracts.—Ver. *Aveleh* (Mar.). These are preparations containing or composed of the active part of a vegetable drug, separated from the woody and other inert constituents. These are prepared with a view to reduce the bulk of the drug to be administered, as also to produce more uniform and rapid results. They are met with in the fluid, semi-solid and solid forms.

Solid and semi-solid extracts.—They are generally prepared by evaporating to the required consistence a solution in which a drug has been steeped for some time or in some other way thoroughly exhausted. In some cases the inspissated juice is called an extract. In some cases the colouring matter of the drug is added to the extract at the last stage of its preparation, when it is called a green extract. (*See* Index.)

Fluid Extract.—Similar preparation to the last but in a fluid form, being merely concentrated solutions. They are made of certain and uniform standard and strength, one minim of the fluid extract representing one grain of the crude drug. Many of them are used for the extemporaneous preparations of infusions, tinctures or wines. They keep well and are both convenient and reliable. (*See* Index.)

Fotus or Fomentation.—It consists of application of heat to a localized part. It is either dry or moist. Dry fomentation is made by applying to the affected part a heated piece of cloth, brick, tile, stone or any substance available which can be heated, or by applying heated ashes held in a piece of cloth. Sometimes certain drugs, containing volatile oils, such as ajmo, datura, tablesalt, &c., are applied hot. Hot water glass or stoneware bottles, also India-rubber bags, are very convenient.

In moist fomentation moisture is also used along with heat. It consists of the application of pieces of cloth, especially flannels, spongiopiline, &c., either wrung out of hot water or heated in steam. Sometimes the hot water is medicated by the addition of such drugs as poppyheads, turpentine, &c.

Varalians.—Ver. *Varal* vapour. Midway between the dry and moist fomentations are the varâliâns, a favourite mode with *vayids* and *hakims*. It consists of heating in a closed vessel for some time flowers, leaves and branches of certain drugs, fresh or dry, and applying them bodily hot, held between the folds of a piece of cloth.

Fumigations.—Ver. *Dhuee, dhumâdo* (Guz.) ; *Bhukhur* (Hind.). It consists of the application over a localized part, or over the whole surface, of the vapours or rather the fumes of drugs burnt or heated over a fire. It is a favourite mode among the *vayids* and *hakims*. The drugs used are mercurials, sulphur, gugul, issas, ajmod, &c.

The following are used over localized parts :—

Bhuiringani fruits with seeds are burnt over a fire and the fumes allowed to play upon caried teeth ; gugal—the fumes are allowed to play upon foul ulcers and other diseases of the nose ; singarâph ; bhânga ; dhatura leaves ; triphalâ. all these are made into tapers, lighted over a fire and their fumes allowed to spread over foul ulcers and about the region of anus as in piles, dysentery, &c.

Gargarisma, Gargles.—It is a liquid preparation containing a drug or drugs, dissolved in or mixed with water, and used for their topical action on the mucous membranes of the mouth, pharynx, and gums. Honey is a constant ingredient in most gargles.

Gauzes.—Medicated pieces of grey shirting, containing a certain percentage of some antiseptic. They are generally tinted with aniline blue, magenta, hæmatoxylin, &c.

Gauze and cotton-wool tissue, otherwise known as Gamgee's tissue, is a thin sheet of cotton-wool between two layers of gauze. (*See* Index.)

Glycerines.—These are preparations in which drugs are dissolved in, or mixed with, glycerine. (*See* Index.)

Gossypium—Cotton Wool, Absorbent Cotton.—The hairs of the seed of *Gossypium herbaceum* and other species freed from impurities and fatty matters and used as a swab plug or as wound dressing. It is medicated with alum, arnica, benzoic acid, camphor, chrysophanic acid, cubebs, krameria, opium, resorcin, tannin, &c.

Guttæ—Drops.—Aqueous medicinal solutions used as drops for the eyes, ears, nose, &c. They are somewhat bigger than minims. The size also varies according to the viscidity of the liquid, and the shape and surface of the orifice from which they escape. Syrups and mucilages have large drops; heavy mobile liquids produce small ones. (*See* Index.)

Infusions.—These are aqueous solutions of the active principles of drugs prepared by macerating, percolating or otherwise thoroughly exhausting them in cold or hot water. The drugs are not boiled with water as in decoctions. For drugs containing volatile principles, or such as would be injured by heat, cold water is used. (*See* Index.)

Inhalations or Vapours.—These are medicinal substances inhaled with ordinary inspirations in the form of vapour, gas or as a spray through an atomizer to act locally on the mucous membrane of the air passages. In many cases the inhalation may be effected through a sponge saturated with the drug. Inhalations are either dry or moist. Moist inhalation consists of breathing in the fumes of volatile substances along with steam or watery vapour or vapours of other liquids.

Dry inhalation consists of the fumes from various solids when heated, as in cigars and cigarettes, and in the Eastern countries as *chillums* and *hookas*. In the case of cigarettes one or more medicinal substances are wrapped in papers or some indifferent leaves. They are burnt at one end and smoked at the other. Cigars are made of actual drugs pressed and rolled into the shape of cigarettes and used in a similar manner.

Chillum.—It is an earthen cup or half the shell of a cocoanut with a hole at the bottom. At the time of using it the substances are put into the cup and live coal placed over the drugs, and the smoke inhaled through the hole. Fashionable cups have the shape of a funnel or dhatura flower.

Hooka, like chillum, is an earthen cup with the hole at the bottom and a tube attached from the hole to a basin of water. The drug is placed in the cup and live coal placed over it, the smoke or the vapour before being inhaled passing through the water in the basin. Another tube passes out of the basin with a mouth-piece which is used for inhalation. It is more of a moist inhalation. The drugs used are ajmuda, cubebs, dhatura, potassium nitras, tobacco, &c.

Injections.—It is a comprehensive term for liquid preparations containing food or drugs—sometimes very active drugs as serums, &c. They are introduced by means of a syringe or other suitable apparatus—(1) Into the cavities or canals, *e.g.*, rectum, vagina, uterus, nose, ears, urethra and bladder; (2) Beneath the skin, *e.g.*, hypodermic injections; (3) Deeply into the tissue, *e.g.*, parenchymatous injections; (4) Into veins or arteries, intravenous or arterial injections, or transfusion.

The injection into the rectum is called an enema when the fluid injected is large in quantity, or clyster if small in quantity.

Saline injections are sometimes used after opening the abdomen to wash out or irrigate the abdomen, also as an enema in collapse during operations.

Hypodermic Pallets for Injection.—As some of the drugs for hypodermic injections require to be administered in very minute doses, great care is necessary in preparing them. For convenience, tablets are prepared by well-known chemists containing a fixed quantity of these drugs, sometimes sufficient for one dose. The advantages of these pallets over the solutions are the accuracy of doses, ready solubility, definite and uniform strength, portability, and preservation. (*See* Index.)

Insufflation.—These are preparation consistisng of solid substances in a state of fine powder and used for the purpose of blowing into the ears, nose, pharynx, larynx, vagina, uterus, sinuses, wounds, &c., through a piece of quill, or any hollow tube, or by specially made apparatus known as insufflators. *Examples*—Bismuth, subnitrate, boracic acid, Iodoform, oxide of zinc, &c.

Inunctions.—These consist of a fixed quantity of a drug or drugs mixed with oleic acid being rubbed on the skin to produce an effect on the general system by absorption. The application is generally made into the groins or armpits.

Lamellæ.—These are thin scales, discs or plates of medicinal substances, each weighing $\frac{1}{30}$ gr., chiefly prepared in glycerine and gelatine ; *e.g.*, atropinæ, cocainæ, homatropinæ, physostigminæ, &c.

Lep.—*Lepvûn* to form a coating (Hind). It is a thick, sticky semifluid compound for local use, containing various resinous and anodyne substances, and some mild counter-irritants, all mixed in alcohol, brandy or mohvá spirit. It is spread over an affected part and covered with cotton. On drying it becomes as hard as a splint and is used by native practitioners as a substitute for them in dislocations, fractures, sprains, bruises, &c. They are also applied over swellings and painful parts with some advantage.

Liniments.—Ver. *Masalwânoo, Lagârvânu, Cholvânu oushad* (Guz.) These are alcoholic or oily preparations in a liquid or semifluid condition for external use only, and applied on the skin with friction with the hand. Embrocations are more liquid liniments. (*See* Index.)

Lenitives.—These are organic animal products which are more quickly absorbed by the skin than most fats. They are soothing to the skin and are useful as a good base for mercurial ointments when used as inunction ; *e.g.*, lard, lanolin, &c.

Liquors—Solutions.—These are aqueous preparations, containing mostly salts in solution in a fixed proportion, generally 1 per cent., with the exception of liquor hydrargyri perchloridi, which is 1 in 875. They are generally for internal use, but some are only used externally. (*See* Index.)

Lotion—Wash.—These are liquid preparations, mostly aqueous solutions of medicinal substances used to wash out a part or to keep it moistened by putting a piece of cloth constantly kept wet with it. (*See* Index.)

Mellita—Honeys.—These are viscid preparations of drugs containing honey for a base, thus differing from syrups, in which syrup of sugar is the base ; *e.g.*, mel. scillæ ; Mel. Rosæ.

Mixtures.—These are liquid preparations containing insoluble substances suspended in them by gum or some other suitable materials.

In general practice, however, all liquid preparations for internal use prepared after a prescription are called mixtures. (*See* Index.)

Ghutado.—(Hind.) "*Ghutvun*," to rub or triturate. Various drugs are rubbed on a slab with a little water till a thick gruelly mass is produced. Sugar is generally added at the end.

Nebulæ—Sprays.—Aqueous medicinal solutions used in atomizers for the throat; *e.g.*, nebula acidi lactici, nebula ferri perchloridi, &c.

Oleates.—These are preparations of oleic acid containing alkaloids or metallic salts in solution and used for external application. They are prepared of various strengths. They are not definite chemical compounds. They are rapidly absorbed, and hence in many cases are superior to ointments. They are cleanly and economical. They do not grow rancid. (*See* Index.)

Olea—Oils, Volatile or Essential Oils.—These are liquid, oily, active organic bodies or definite chemical compounds and form a large group of organic substances found in plants. They are obtained by distillation with water, being volatizable at the temperature of boiling water; by expression; by crushing the seeds or vegetable parts or by solution.

Characters.—They are liquid at ordinary temperatures, without any colour or pale or yellowish. In some the odour is strong, somewhat pungent and nutty. They are slightly soluble in water, more soluble in alcohol or ether. They are more or less inflammable, and by long exposure to cold divide into a solid crystalline portion known as stearopten or camphor and a liquid or volatile portion known as elœopten. A few consist of a single proximate principle, *e.g.*, oil of betula which is wholely methyl salicylate. Most of them are complex bodies and consist of two or more principles which are separable from one another. Those containing carbon and hydrogen are known as hydrocarbon oils or terpenes, *e.g.*, oil of turpentine. Those containing carbon, hydrogen and oxygen are known as oxygenated oils. They are highly aromatic and contain terpene mixed with oxygenated principle (an acid, analdehyde, &c.), *e.g.*, cinnamon oil, peppermint oil. Those containing carbon, hydrogen and nitrogen are known as nitrogenous oils and are formed by mere maceration with water, *e.g.*, oil of bitter almond, oil of peach kernel, &c. Those containing carbon, hydrogen and sulphur are known as sulphuretted oils. They are pungent and disagreeable in odour and

taste, *e.g.*, oil of mustard and oil of garlic. In the case of mustard, the oil does not exist in the plant, but is formed by the action of water upon its constituent principles. (*See* Index.)

Fixed Oils.—They exist both in plants and in animals as fats. They are compound bodies containing the radicle glyceryl in combination with anhydrides of fatty acids as oleic, palmitic and stearic. They are drying, greasy or solid oils. They are composed of carbon, hydrogen and oxygen. Fixed oils are found in the fat or adipose tissue of animals and in the seeds and fruits of plants. They are pale, yellow liquids, taste oleaginous and insipid, of neutral reaction, and leaving a permanent stain. They are insoluble in water. With hot water and an alkali their glyceryl is converted into glycerine, and the alkali combines with fatty acids to form soaps. Cod liver oil when mixed with an alkaline solution yields oxide of propyl and fatty acids, but no glycerine. (*See* Index.)

Paste.—A term loosely applied to paints as also to solid powders to be applied to the skin moistened with water or mixed with some excipient. They act locally, some are escharotics, others astringents and some soothing. Among the natives paste is largely used. *e.g.*, Vienna Paste, chunam and honey, &c.

Pastilli—Pastils.—These are lozengelike pieces specially adapted for the throat and mouth medication. They are very agreeable and pleasant to the taste, and gelatinous in their nature. (*See* Index.)

Perles.—These are preparations of volatile liquids contained in a capsule of gelatine. They are of the shape of pearls and used medicinally for internal administration. (*See* Index.)

Pencils or Crayons—Are cylinders made of wax mixed with medicated substances. They are hard and resisting. They are inserted into a cavity and allowed to dissolve in it. The substances used are—Nitrate of silver, Sulphate of zinc, Tannin, &c.

Pigments or Paints.—These are also external applications for inflamed joints, skin diseases and for the throat. They are applied by means of a camel's hair brush. (*See* Index.)

Pilulæ—Pills.—Ver. *Vati* (Hind.); *Goli* (Guz. and Mar.). These are small spherical or oval masses of the size and shape of green peas, containing one or more drugs held together by a sticky substance called excipient, very portable and easily swallowed whole. They serve as convenient modes of administering drugs, especially the alkaloids and other active substances which have to be given in

minute doses and which are of a nauseous character. They should not be very hard, as they are liable to pass through the body unchanged, nor so soft as to lose their shape. There are many and various excipients used for pill-making, such as alcohol, glucose, soft extracts, glycerine, honey, syrup, bread crumb, butter of cocao, gum, gum resin, kaolin, liquorice, confection of roses, soap, starch, &c. Most of these are indiscriminately used, but certain drugs require particular excipients, *e.g.*—Aloes require soap; Calcium sulphide—liquorice root and gum tragacanth; Camphor—glycerine of tragacanth; Carbolic acid and croton oil, bread crumb; Creosote and ferrous-iodide—powdered liquorice; Copaiba—magnesium carbonate; Ferrous sulphate—myrrh and syrup; Gallic acid—glycerine; Nitrate of silver—kaolin; Pancreatin and aloes—keratin.

In order to prevent them sticking one with another after they have been completely rolled into spherical masses, they are coated with certain absorbent powders known as conspergatives, such as French chalk, magnesia, sugar, powdered liquorice, lycopodium, talc, althæa, rice flour, &c. Sometimes with the same object the pills are coated with a film of silver or gold. The silvering of the pills is not now so much in vogue as formerly, as gelatine-coated pills are coming more and more into fashion. In these the drugs are simply encased in a shell of gelatine and they are very convenient. Again, pills are sometimes varnished with sandarach, mastiche, tolu, &c.; but by this process the size of the pills is inconveniently increased, and hence this mode is rarely resorted to. They are also coated with a layer of sugar.

In India, owing to the damp climate, sugar-coating is not much in favour. Sugar-coating, no doubt, is elegant and the pills keep well; but they sometimes pass unchanged through the body.

In gelatine-coated pills, the coating is extremely thin. The pill is preserved better than by any other method of coating, but it is liable to become damp.

Plagets.—These are small masses of cotton, sponge or other soft and porous material, moistened with or soaked in a medicated fluid, and applied to the inner walls of a cavity. (*See* Index.)

Plaster Mulls.—A kind of dressing consisting of a fine sheet of gutta-percha, coated on one side with an adhesive medicine and on the other with muslin or mull. (*See* Index.)

Powders.—Ver. *Fâkie* (Guz.); *Churan* (Sans.)—"*Churan*" to crush or break into fine pieces. These are drug or drugs in a state of fine powder and thoroughly mixed. Generally these powders are of an

insoluble nature. Some substances are not capable of fine pulverization unless some hard and inert substance has been added to aid the process, such as sulphate of potash for opium, a drop of spirit for camphor, &c. (*See* Index.)

Soloids.—These are preparations similar to tabloids, but for external use only. They contain fixed or known quantities of the drug or drugs, and are very handy and convenient for preparing solutions of known strengths. They are also useful in preparing test solutions of re-agents necessary for chemical test for the analyses of water or urine in which the quantity of the re-agent in relation to the substance to be tested is so important. They are portable and reliable antiseptics, astringents, &c. (*See* Index.)

Spirits.—These are preparations of spirit containing in solution volatile medicinal substances. They are either simply dissolved or prepared by maceration or distillation.

Among the natives there are certain alcoholic preparations known as *asva* and *arishta* (Sans.) which are similar to the above. These are prepared by adding honey or molasses (jaggary) to various medicinal substances reduced to a coarse powder, the whole being next mixed with water and allowed to ferment for some time, *e.g.*— Kumâri asava, Drâkhsha asava, Loha asava, Kulah asava, &c. (*See* Index.)

Suppositoria—Suppositories and Pessus—Pessaries.—These are solid medicinal preparations containing alkaloids, extracts, or metallic salts. They have a local action when introduced into the vagina, urethra or rectum. They are prepared by intimately mixing the drug or drugs together with an excipient as gelatin, glycerine, cocao butter, bees wax, gum, hard soap, or starch, &c.

Some suppositories are known as torpedoes. They are generally prepared of certain weights. The mass is either poured into suitable moulds or rolled into convenient shapes—cone-shaped for the rectum, pencil-shaped for the urethra, and globular for the vagina. The heat of the parts melts the excipient, setting free the drugs, which produce the desired effects. Those for the vagina are called pessaries. Those for the rectum are called suppositories. (*See* Index.)

Thimble pessaries are hollow at the base to allow the end of the finger to go in, and are, therefore, easy of introduction, *e.g.*— Quinine, cocaine, &c.

Syrupi—Syrups.—Ver. *Sharbat* (Hind.); —"*Sharbut*" a drink or beverage.

It is a concentrated solution of sugar dissolved by heat when it is called simple syrup. Whenever it is added to some medicine, or some medicine is digested in it, it is called medicated syrup. (*See* Index.)

Succus or Juices.—These are liquids obtained by expression of a part or the whole of plants and preserved with alcohol. (*See* Index.)

Tablets or Tabloids.—These are preparations for internal or hypodermic use containing one or more drugs in powdered form, compressed into the shape of tablets. The advantages of these preparations are that they are convenient, portable, and reliable as regards dosage and purity when prepared by well-known firms. For hypodermic use this is the only convenient way in which drugs which require to be administered in minute doses can be dispensed or carried by the physician. (*See* Index.)

Tincturæ—Tinctures.—Ver. *Arak* (Hind.) Solutions of non-volatile constituents of a drug or drugs in alcohol or alcohol and water. They differ from spirits in the fact that the drugs for the preparation of tinctures are generally of a non-volatile character and prepared by dilution, maceration, percolation or solution. (*See* Index.)

ETHEREAL TINCTURES.—They are similar to the Tinctures except that they contain pure ether as the menstruum instead of spirit. Ethereal tinctures are mostly intended to be applied to the skin, as they are superior to spirit tinctures in that they evaporate rapidly and penetrate the skin, and have a solvent action on the sebaceous secretions of the skin, *e.g.*—Tinctura belladonnæ ætherea ; tinctura capsici ætherea ; tinctura iodi ætherea ; tinctura menthol ætherea.

Arak includes a large number of native preparations. Of which some are of the nature of tinctures, others of extract, and the rest of volatile olls. (*See* Index.)

Trochisci, troches, Lozenges.—These preparations contain one or more drugs compressed into lozenge, disk, or some other elegant forms, and intended to be kept in the mouth to be dissolved, with a view to allow the active ingredients to act topically on the mucous membrane of the mouth, throat, &c. They are prepared with such excipients as sugar, mucilage, &c. (*See* Index.)

Unguenta—Ointments.—These are semisolid preparations for external use, containing various medicinal substances dissolved in, mixed or in chemical combination with fats, fixed oils, petroleum or wax. (*See* Index.)

Vini—Wines.—These are preparations similar to tinctures, with the difference that instead of proof or rectified spirits they are made with wines. (*See* Index.)

ORGANIC DRUGS OF ANIMAL ORIGIN.

VARIOUS substances derived from the animal kingdom are in use as medicinal agents. Of late, this group has received considerable additions, and at no distant date will this kingdom supply a very large number of useful drugs. Various glands and organs of the body in their raw state have already obtained a recognised place as useful remedial agents. Besides, Serotherapy is destined to revolutionize Materia Medica. In the following pages are treated the principal animal products used as medicines in the Western Science, and an effort has been made to treat at length medicinal substances derived from this kingdom which are used by the natives.

The agents so used include—

1. Whole animals as Leech, Coccus, Cantharis, &c.
2. Animal products, tissues and secretions,
   e.g., eggs, isinglass, musk, pepsin, oxgall, &c.
3. Calcareous skeletons and concretions,
   e.g., coral, bone, &c.

It may be mentioned that in several cases the value of the remedies of the latter class is questionable, whereas in a few cases it is merely fanciful.

Animal Kingdom is divided into two grand divisions—Vertebrata and Invertebrata.

VERTEBRATA is sub-divided into 1—mammalia, 2—aves or birds, and 3—pisces or fishes.

MAMMALIA.—It is the most highly developed class among the vertebrata, and the animals belonging to it have a spinal column. They breathe by lungs, and are warm-blooded; but the chief peculiarity is that they all suckle their young ones through mammary glands having nipples.

The class Mammalia is sub-divided into several orders—

1 Ruminantia, 2 Pachydermata, and 3 Cetacea.

RUMINANTIA.

These are ruminating animals which chew the cud, and include horned cattle, as the deer, the sheep, the cow, the camel, &c. They are hoofed quadrupeds with cloven feet and having a stomach with four divisions. The food having passed through the first two compartments is ground and rolled into a ball (cud) which is again brought up into the mouth to be further chewed. It is then passed into the 3rd and 4th compartments for final disposal.

Moschus moschiferus. B. P.—The musk animal. Moschus, Sans Mushka, testicle Orig, a little mouse. Moschiferus, from Moschus Musk and ferre to bear. Musk-producing animal.

Habitat.—China, Russia, Assam, Central Asia and pine forests and the inaccessible cliffs of the Himalayas.

Parts used.—The dried secretion from the preputial foliicles—Moschus, Musk, B. P.

Vernacular.—Arab.—*Mishk, Mushk;* Burm.—*Kado;* Beng.—*Kastûri;* Can.—*Kastûri;* Cing.—*Urula, Kastûri;* Guz.—*Kastûri;* Hind—*Kasturi;* Malay.—*Jabat, Kastûri;* Pers.—*Mishk, Mushk;* Sans.—*Mragnabhi, Kastûri;* Tam.—*Kastûri;* Tel.—*Kasturi;* Duk.—*Mushk;* Mar.—*Kastûri.*

Musk is generally found embedded in a round or oval reddish sac or pouch, about two inches in diameter, having the upper surface flat with smooth membrane, the under-surface convex and covered with stiff, greyish hair, arranged concentrically, which surround an opening near the centre of the sac. The animal on an average yields 2 to 4 drachms of the secretion. Canton musk is an artificial preparation of oil of amber and nitric acid.

Characters.—In the living animal the musk has the consistence of honey, and is of a brownish-red colour. Commercial musk is almost solid, in irregular reddish-black or brown grains, and slightly unctuous to the touch. Genuine musk is only the inspissated and dried secretion from the male preputial follicles of the animal, the odour is very strong, diffusible and peculiar; taste bitter and aromatic; soluble in alcohol (about 10 per cent.), in water 50 per cent., also in ether and alkalies. The watery solution is faintly acid. When rubbed on paper, it gives a yellow stain, leaving no residue. When burnt, it gives off urinous smell, leaving greyish ash about 8 per cent.

The smell entirely disappears when triturated with *Camphor, Ergot, Fennel, Garlic, Hydrocyanic Acid* or oily seeds, or when long dried over the fumes of sulphuric acid. The odour returns on exposure to the air and moisture. Dose—5 to 10 grs.

Constituents.—Ammonia, olein, cholesterine, fat, wax, gelatinous matter, albuminous principles and ash. The ash is composed chiefly of the chlorides of potassium, sodium and lime.

It is used as enema, emulsion, suppositories and pills.

Preparations Tincture (1 to 10). Dose—½ to 1 dr.

Physiological action.—A diffusible stimulant, anodyne, antispasmodic and aphrodisiac. It supports the action of the heart, exhilerates the mind, and stimulates the brain, spinal cord and the peripheral nerves. It improves the circulation, and raises arterial tension. As a stimulant of the urinogenital organs, it is believed to increase the sexual desire. It is eliminated in the urine, sweat and milk. *Therapeutics.*—As a diffusible stimulant, it is used in various adynamic fevers, as typhoid, typhus and typho-remittent fevers and in all typhose conditions. Under its use the patient gets refreshing sleep. As an antispasmodic, like asafetida, camphor, ammonia, &c., it is given in hysteria, colic, chorea, whooping cough, asthma, laryngismus stridulus, &c. As an aphrodisiac it is given in combination with other aphrodisiacs in seminal weakness and impotence.

Castor Fibre, the Beaver.

Parts used.—The dried preputial follicles and their concrete secretion—Castoreum.

Habitat.—Canada, Russia, America and Siberia.

Vernacular.—Eng.—Castoreum, Castor; Arab.—*Ashbutchegan, Zabad;* Guz.—*Zande-bidastara;* Hind.—*Gondbadustar, Jund;* Malay.—*Jabat;* Pers.—*Kundbadastar, Khàyahe-sage-abi;* Tam.—*Kastûri munai;* Duk.—*Jun, Gavad;* Tel.—*Zunun, Neru, Kukka bejam;* Sans.—*Ghenda;* Malay.—*Alu Beeyum.*

Castoreum.—These are found in pairs, fig-shaped, about 3 inches long, firm, heavy and of a greyish-black colour, and contain the concrete secretion. The secretion is also found in the two sacs situated near the anus.

Characters.—When fresh, the secretion is of a flesh colour. After drying it becomes reddish-brown or black. It has a pungent odour of cat's urine. The taste is acrid and bitter. It is sparingly soluble in rectified spirit (1 in 3), and in ether. The solution is of a brown colour, and becomes turbid on the addition of water. Dose—5 to 10 grs.

Constituents.—Volatile oil, having carbolic acid 1 to 2 per cent.; acrid bitter resin 15 to 58 per cent.; crystalline substances, such as castorin, cholesterin and salicin.

Preparation.—Tincture (10 per cent.). Dose—½ to 1 dr.

Physiological action.—Mild stimulant, antispasmodic and emmenagogue. It is a stimulant of the exhausted nervous system. *Therapeutics.*—As an antispasmodic it is useful in hysteria, epilepsy, asthma, muscular tremors, tympanitis. It has a specific influence over the uterus, and is given as an emmenagogue in amenorrhœa and dysmenorrhœa. It is weaker in action than musk, valerian, camphor, ether or ammonia.

Viverra Civetta and V. Zibetha.

Parts used.—Unctuous secretion—Ghanda Marjora.

Habitat.—Malabar, Africa and S. Asia.

Eng.—Civet cat. Zibeth cat.

Vernacular.—Arab.—*Gatt;* Beng.—*Katas Mach-bhondar Bagdos;* Bomb.—*Ladana;* Sans.—*Ghanda Marjora;* Tam.—*Sawaduponi.*

GHANDA MARJORA.—"Gandha," smell, and "Marjora," a cat. The produce obtained from the cat has the odour resembling amber.

The secretion collects in a shallow pouch situated between the anus and the genital organs. This pouch communicates with two small sacs, the inner surface of which is pierced with several small apertures communicating with the glandular secreting follicles.

Characters.—An unctuous secretion. When fresh, it is semi-fluid and of a yellow colour; after a time it soon becomes hard, lumpy and of a dark colour. In appearance it resembles Berberis extract. The odour is ammoniacal like that of rotten pomegranate grains or of Gurâko, a preparation of tobacco. The taste is pungent. A spurious variety, known as "Amber-no-katchro," is an adulterated preparation containing amber dust mixed with small hair, fibres and pieces of wood and ammonia. Dose—2 to 5 grs.

Constituents.—Free ammonia, resin, fat, extractive matter and volatile oils, to which its odoriferous properties are due.

Preparation.—Extract. Dose—2 to 5 grs. and liniment.

Actions and uses.—Stimulant, aphrodisiac and antispasmodic given in hysteria and nervous exhaustion. The natives mainly use it for perfumery.

Cervus Elaphus.—*C. aristotelis, C. equinus.*

Parts used.—The horn.

Habitat.—India, Sumatra and Java.

Vernacular.—Eng.—Stag horn ; Guz.—*Sambar singdûn ;* Hind.—*Bara singha ;* Sans.—*Mrag shriñga ;* Beng.—*Ghous or Gaoj, Bhalouje (female) ;* Can.—*Kadavi, Kadaba ;* Mar.—*Meru ;* Tel.—*Kannadi ;* Pers.—*Maral, Gookorh.*

Characters.—The horn consists of three anterior antlers which are curved upwards and shed annually. It is heavy, of a light dark-brown or a pale-yellow colour, generally marked with longitudinal ridges which are irregularly tuberculated. On section it is porous, hard in the centre and compact at the margin. It smells, when fresh, like burnt sugar.

Preparations.—Sâmbersing bhashma (ash), Jame's powder and sambersing paste.

Sabarsing Bhasm.—Roast the horn in an open fire for a long time, when it becomes fragile, and then powder. Another method—Soak its pieces in the milky juice of *Calotropis gigantea* for some time and then roast, or boil the soaked pieces in water, when jelly separates, and incinerate the clean bones which gives pure calcium phosphate. Dose—5 to 15 grs.

Jame's powder may be obtained by mixing the bhasm with sulphuret of antimony and subjecting the mixture to white heat. This will yield antimony oxide and calcium phosphate.

Sambarsing paste.—A thick liquid cream. To obtain it, rub the stag horn on a piece of stone, pouring hot water over it from time to time.

Constituents.—It consists mainly of calcium phosphate.

Physiological action.—Locally, astringent and sedative. Internally a nervine and blood tonic. The bhasm (ash) is used to improve

nutrition and nerve function. *Therapeutics.*—The paste is applied in combination with ammonia, brandy, eau de cologne, &c., to sprains, contusions, cracks and fissures, to the forehead in headache and to relieve itching in chronic skin diseases ; also to orchitis and other enlarged glands. Internally, as a tonic, the bhasm is given with honey in cough, asthma, consumption, enlarged glands, and in seminal debility.

Cervus Dama.—Eng.—Deer horn. Sans.—Haransing, Mriga sringa, used for similar purposes like stag horn.

Ovis Aries.—The sheep, B. P.

Habitat.—All parts of the globe.

Three medicinal preparations are obtained from the sheep :—Sevum Præparatum, Prepared Suet B. P. (Mutton suet), Adeps Lanæ Hydrosus B. P. and Adeps Lanæ, B. P.

Sevum Præparatum, Prepared Suet, B. P.—The internal fat of the abdomen of the sheep, chiefly from round the kidneys.

To prepare it, cut the fat in thin pieces, melt, strain and purify or boil in water, and collect the floating fat.

Vernacular.—Arab—*Samin, Shahin ;* Beng.—*Charbhi, Chiknâ ;* Can —*Kobbu ;* Duk.—*Charbi ;* Hind.—*Charbi ;* Pers.—*Paiyah ;* Tam.—*Koshuppu ;* Tel.—*Kavvu* ; Guz.—*Charbi.*

Characters.—A white, smooth, solid, unctuous mass, harder than lard, of a bland taste, almost without any odour, becoming rancid by keeping. It melts between 112° F. and 120° F. Soluble in other 60 parts, benzol 2 parts and in boiling alcohol ; insoluble in water and cold alcohol ; freely soluble in petroleum spirit.

Constituents.—Stearin palmitin and olein ; salts of oleic, margaric and stearic acids, with a common base glycerin ; also a trace of hercin, some colouring matter and odorous principles.

Used as cerates, ointments, plasters and liniments.

Preparations. Unguentum hydrargyri. Sapo animalis B. P., or curd soap. This soap is obtained from sodium hydroxide and purified animal fat. It consists principally of stearin and 30 per cent. of water.

Actions and uses.—Emollient, used as dressing for blisters, and as a protective for excoriated surfaces, chapped hands, cracks, fissures, &c.

Adeps Lanæ, B. P., or Adeps Lanæ Anhydrosus.—Anhydrous wool fat.

Lana "Wool."—It is a purified cholesterin—fat of sheep's wool; also found in human skin, hair, feathers of fowls and various parts of other animals.

Preparation.—Soak the wool in a weak solution of soda, dissolve the creamy mixture or emulsion in alcohol, ether or benzin, put this mass into a centrifugal machine, and separate the upper layer of cholesterin—fat from the lower one which contains impure fatty acids. Treat the upper layer with chloride of calcium which forms crude lanolin and calcium soap, wash repeatedly, and dissolve in acetone, when lanolin will separate.

Characters.—A yellowish, unctuous, tenacious substance, without any odour.

Adeps Lanæ Hydrosus, B. P.—Hydrous wool fat.

Syn. Lanolin, Lanolinum, Agnin.

Lanoleum.—Lana wool, and oleum oil. The oil in the wool.

Preparations.—Melt anhydrous wool fat 7, mix with water 3, and strain. It contains 50 per cent. of lanolin by weight.

Characters.—Lanolin is a neutral base, a yellowish-white, unctuous mass of a sharp peculiar odour. It does not become rancid, and is not miscible with glycerin, but miscible with water. If heated, the watery portion separates from an upper oily layer. It is partially soluble in alcohol. Ether and chloroform dissolve only the fat it contains.

Constituents.—Cholesterine, palmitic, stearic, oleic, valerianic acids and ash.

Physiological action.—Emollient; it has a great affinity for the skin, and is readily absorbed. *Therapeutics.*—A good application for excoriation of the mouth, nose, anus, &c.; also for burns and scalds. Mixed with cocaine (4 per cent.) it is used in chronic skin diseases, as eczema, &c. It is an ideal ointment base more quickly absorbed by the skin than any other fat. It helps absorption of narcotic extracts, quinine, chaulmugra oil, iodine, and potassium iodide. Under its use iodine is found in the urine in three minutes. It is more readily absorbed in children than in adults. A good application with chrysarobin in ringworm, psoriasis, tinea, &c.

Bos Taurus.—The ox and the cow.

Habitat.—All parts of the globe.

Vernacular.—Beng.—*Van-go;* Burm.—*Pyoung;* Can.—*Kar-kona;* Hind.—*Bail;* Mar.—*Bail;* Tam.—*Mar;* Arab.—*Bakara;* Guz.—*Balad.*

The animal is large, long and high, head low, neck and legs short, hoofs broad, horns unbranched, tail tufted at the end, teats inguinal. Different parts of this animal are used in medicine.

Sevum Bovinum, Beef Tallow.—It is the internal fat of *Bos taurus*, similar to suet, but has a different odour and contains more palmitin, but no hercin. It is sometimes used as an ingredient in the preparation of emplastrum cantharides and unguentum hydrargyri instead of prepared suet.

Cardine—An extract from the heart of bovine animals, in the form of a dark-brown, desiccated powder. Dose—3 to 5 grs.

Actions and uses.—A cardiac tonic, and given in nervous debility anæmia, &c.

Nutritive Meat Preparations.—Beef has a very high nutritive value. It contains albuminoids 20, fat 3, extractive 1½, salts 1½, water 74, creatin a trace.

Extract of Meat.—*Extractum carnis* and Liquor carnis.

To prepare it, concentrate the aqueous solution of meat. It contains very little albuminous principles or gelatin. It consists chiefly of creatine, creatinin, globulin, urea, alkaline salts, &c.

A dark or reddish-brown, dried extract; taste and odour like that of flesh. Soluble in water (1 in 60), more soluble in albuminoids, in salines and in dilute acetic acid.

Used as a nerveine tonic and stimulant and as a flavouring agent in soups.

Essence of Beef.—Exhaust beef with tepid water. It occurs as a soft, transparent, amber-coloured jelly. Agreeable to the delicate stomach and useful in allaying obstinate vomiting.

Peptonised Meat.—To prepare it digest minced meat with pepsin and hydrochloric acid for several hours; then neutralize with soda and strain.

Beef peptonoid is peptonised meat mixed with milk and wheat gluten.

MEAT JUICES, LIQUOR CARNIS.—Bovril, Bovinine, &c. These are uncooked, pressed juice of meat, concentrated and preserved by the addition of carbohydrates. A reddish liquid of a sweet taste. Hot water coagulates the albumen in them. Dose—a tea-spoonful.

VINUM CARNIS (1 in 2) of wine.

CARNI FERRIN.—A compound preparation obtained from meat extract or from whey and iron phosphate; it does not decompose. A tasteless powder; it is readily absorbed, and easily assimilated. It mixes with acid and alkaline solutions. Dose—3 to 8 grs.

CARINGEN.—An ox beef powder. It is very readily assimilated and is nutritive and invigorating; given to invalids and to patients with weak digestion.

CREATINE.—Methyl-guanido-acetic acid occurring in flesh. Highly nutritive and readily assimilated. Dose—1½ grs.

Somatose.—A nutrient, dry, light yellow granular meat powder, without any odour or taste, readily soluble in water, milk, soup, coffee, cocoa, &c.

It contains 80 per cent. of albuminoid principles of meat, nitrogenous compounds, components of the muscular tissue in the form of casein, creatine and albumose in a highly soluble form. Dose—a teaspoonful. Greatly assists lactation.

Iron Somatose—Ferro Somatose.—A combination of albuminous substance of meat with iron. A tasteless brown powder. Freely soluble in water, containing 4·5 per cent. of ferric oxide combined with albumose. Dose 75 to 150 grs.

Milk Somatose or Lacto Somatose.—It contains albumoses of milk combined with 5 per cent. of tannic acid and desiccated. It is freely soluble in water. Dose 1 to 2 teaspoonfuls.

Physiological action.—These meat preparations are nutritive, slightly astringent and non-irritant, and contain a large amount of nitrogenous material, iron and its salts, and carbohydrates as fat. They contain an easily soluble albumen. They create appetite like peptones, increase the production of the gastric juice, and assist in the building up of the tissues. They do not contains starch or sugar.
Therapeutics.—Meat preparations are very convenient for the sick-room, generally given to invalids, being readily absorbed. Liquor carnis is peculiarly rich in albuminoids, whereas essence of meat

contains the least amount of albuminous constituents, but it contains a large quantity of salts and flavouring matter. Its nutritive value is small, but is a good stimulant. These meat preparations are given in tuberculosis, during convalescence from acute diseases, in vomiting of pregnancy, in diseases of the stomach and of the intestinal tract, also in fevers, influenza, chlorosis, diabetes, dysentery and rickets. As a galactagogue they are very useful.

Creatine is a cardiac and gastric restorative, also a nervo-muscular excitant; given in atony of the stomach and for general debility. Somatose and its preparations are gastric tonic and true nutrients; given to invalids during convalescence from acute diseases. Iron somatose does not cause gastric disturbance or constipation. Milk somatose is astringent and non-irritant and therefore good for children.

Fel Bovis—Fresh ox gall.

Vernacular.—Arab.—*Safraul-bagar*; Duk.—*Bâil-ka-pit*; Hind.—*Bail-ka-sbfra*; Pers.—*Zabrahe-gav.*

Characters.—Fresh ox bile which is secreted by the liver and collected in the gall-bladder, is a dark or yellowish-green, viscid liquid of a peculiar unpleasant odour, and having a partly sweet and partly bitter taste. It is neutral or faintly alkaline in reaction, soluble in water and alcohol.

Fel bovinum purificatum.—*Fel tauri depuratum.*

Vernacular.—Eng.—Purified ox bile. Arab.—*Hajr-ul-bahr*; Beng.—*Gairoon*; Burm.—*Goyasin*; Can.—*Garô chana*; Sing.—*Visagul*; Duk.—*Gorochana, Gairoon*; Guz.—*Guruchandan*; Hind.—*Zeharmohra, Garochana*; Malay.—*Goliga, Mamlika*; Mar.—*Gaôrochan*; Pers.—*Pad Zehare Havani, Pao Zehar*; Sans.—*Gôrôchanam*; Tam.—*Gôrô janai*; Tel.—*Gôrô janam*; Kani.—*Gerudapalsarai.*

Gaurochan is derived from "Gao," a cow, and "rochana," a digestive fluid or juice.

Pao Zehar.—"Pao," to purify, and "zehar," a poison.

To prepare it, take fresh ox gall, evaporate to one-third, add alcohol. Filter, distil off and evaporate until it acquires a suitable consistence, for making pills. It is a yellowish-green substance, having a disagreeable and bitter taste. The smell is that of dried bile. Soluble in water and alcohol. Dose—5 to 15 grs.

Bezoar.—Serpent stone. True Bezoar is said to be a concretion found in the stomach and in the gall bladder of an ox or cow, and

occurs as light and yellowish or green solid or spherical concretions, resembling pieces of rhubarb. On section it has a laminated structure, and it throws off a thin, small, scaly crust when a hot needle is thrust into it. In hot water it remains unchanged. Rubbed on chalk, the trace left is yellow; on quicklime it is green. In native practice it is highly prized and extensively used. Dose—$\frac{1}{6}$ to $\frac{1}{4}$ gr.

Artificial Bezoar.—It is an artificially prepared substance made up of ox gall mixed with hair, wood, magnesia, phosphate of lime, pipe-clay, &c.

Constituents.—Fresh bile contains water 80 or 90 per cent., solids 10 per cent. The solids include bilirubin or cholepyrrhin and other colouring matters, cholesterin, lecithin, sodium salts of glycocholic and taurocholic acids, mucilage and salts. These acids when boiled with alkalies yield glycocoll and taurin.

Uses.—Used as paste, powder, medicated oil, capsules and pills. The medicated oil contains ox gall, olive oil, and spirit of camphor.

Physiological action.—Ox gall is stomachic, tonic, cholagogue, laxative, vermifuge and antiseptic. It assists in the emulsification of fats and in increasing the absorbent powers of the mucous membranes. In the stomach it neutralizes the acid gastric juice and precipitates pepsin.

Therapeutics.—As a laxative it is given in intestinal disorders with deficient secretion of bile and with pale-coloured and fœtid stools; also given in dyspepsia, constipation, jaundice; tabes mesenterica, epilepsy, delirium and in diabetes. Locally it is applied to bring about resolution of glandular enlargements, as hypertrophied mammæ, enlarged tonsils, &c. It is also applied to sprains, chronic rheumatic joints, and is dropped into the ear to remove accumulated wax. In India it is extensively used in capillary bronchitis and in chronic fevers with *Picorrhiza kurroa.*

Milk.—A fresh secretion from the mammary glands of females, cows, she-goats, she-asses, she-camels and mares. It is used both as a nutrient and medicine.

Vernacular.—Arab.—*Halib;* Labban; Chin.—*Niu ju;* Hind.—*Dudh;* Malay.—(labour). *Susu, Ayarsusu;* Maleal.—*Musu;* Pers.—*Shir;* Port.—*Leite;* Shingh.—*Ellakerrie;* Tam.—*Pal, Palu;* Tel.—*Pal, Palu;* Guz.—*Dudh.*

The vernacular expressions for the milk of different animals above named are formed by prefixing the names of the animals to the respective vernacular names of the milk.

Labban or Labbun means a milk-seller. The term is used as a mark of disgrace. In their own community the Arabs never sell milk, but will always give it gratis or in exchange for milk. This sentiment therefore recognises the traveller's or guest's right to call for milk and take it gratis. Camel's milk is used in Asia, and mare's milk by the Moguls. They extract from it a fermented liquid called *koumiss*. *Koumiss* contains solid matter 17 per cent., sugar of milk 8 per cent., and is very liable to undergo alcoholic fermentation.

Characters.—Milk is an opaque, white, emulsive fluid. Taste sweet and bland; odour faint and peculiar; kept for a long time, it ferments. When milk is allowed to stand for some hours, a scum forms on the surface in the form of cream, which, when churned, separates into butter and butter-milk.

Constituents.—Milk contains all the elements necessary for the growth and nutrition of bones, nerves, muscles and other tissues. It is composed of a clear liquid and numerous globules of fatty matter floating in it. It contains caseine, the chief albuminoid constituent; butter, fat, a kind of sugar known as sugar of milk, various salts, other solid matters and water.

The constituents of milk vary according to the animal and the kind of food it takes.

Cow's Milk contains albuminoids 4 per cent., fat 4 per cent., sugar 5 per cent., salts 1¼ per cent., water 85½ per cent. Buffalo's milk is richer than the cow's, and yields more butter. Ass's Milk contains less of salts and fat and more of sugar. Human Milk contains more of fat and less of salts.

Condensed Milk.—To prepare it, add sugar and an alkali to fresh cow's milk, and evaporate it in a vacuum till it becomes thick. When reduced to a fine powder, it is known as Desiccated milk.

Peptonised or Predigested Milk.—Heat milk with water (2 to 1) to a temperature of 140° F. and add to it, when cool, peptonizing powder or sodium bicarbonate 10 grs. and liquor pancreatis 2 drs. in one pint, and boil the product.

Artificial Human Milk.—Add to fresh milk ⅔ pint, the cream removed from other milk ⅓ pint after standing for 12 hours.

Curdle what is left which is skimmed milk with rennet for a few minutes, then separate the whey. The whey thus left is heated to boiling point and casein is removed. To this add milk sugar 110 grs. and mix it with milk ⅔ pint, containing the cream of the other ⅓ pint. It should be used within few hours.

Plasmon.—A pure soluble milk proteid, prepared by separating caseine of milk, and leaving the albumen unaltered.

Characters.—A colourless, white powder, containing 92 per cent. of proteids. It is without any odour or taste. It is soluble in soup and milk. In water the powder swells up to a gelatinous mass which dissolves as more water is added.

Constituents.—Albumen, phosphates of ammonium, sodium and potassium and a small quantity of common salt.

Cheese.—Principally consists of casein, an albuminoid constituent of the milk. To prepare it, coagulate cow's milk by means of rennet or an acid or with *yeast*—a product of the fermentation of malt liuqor—and after separation submit it to pressure. Like albumen, it is not coagulated by heat, but is precipitated by acids. It contains albuminoids, fat, salts, other non-nitrogenous matter and water.

Eucasein.—A caseine ammonium compound. It is milk caseine in a soluble and easily digestible form, prepared solely from the pure milk of the cow.

Characters.—A soluble powder, containing about 95 per cent. of pure absorbable albumen ; without any odour or taste. Used as food it is highly nutritive.

Butter—Butyrum.—Principal fatty matter of the milk.

Vernacular.—Hind.—*Karra, Muska, Mackar ;* Chin.—*Neu-nai-yu, Su-yu ;* Mar.—*Makhan ;* Mal.—*Maniksapi Mantega ;* Tam.—*Venne ;* Tel.—*Venna ;* Guz.—*Makhan.* Butter-milk.—Hind.—*Dhai ;* Tam.—*Moroo* ; Tel.—*Salla, Majiga.*

Preparation.—Allow milk to stand, separate lighter matters suspended in it. This is cream. Churn the cream, and it will separate into butter and butter-milk.

Characters.—Butter is a soft, yellowish-white mass of fat globules of a delicate and sweet odour, bland taste and neutral reaction. Dose—2 to 4 drs.

Constituents.—Olein 30 per cent., palmitin and stearin 68 per cent., glycerides of butyric, capronic, caprylic and caprinic acids 2 per cent.

Used as an ointment base and as food.

Ghee.—Clarified butter—obtained by boiling fresh butter and removing the impurities which settle down. It is a clear amber-coloured, granular fluid or semi-solid mass, having a peculiar agreeable fatty odour and pleasant taste. Dose—1 to 4 drs.

Saccharum Lactis—Milk Sugar, Lactose, B. P.—Milk sugar is found in mammal's milk. It is obtained from the whey of milk. To prepare it add sulphuric acid to skimmed milk, evaporate the resulting whey to $\frac{1}{10}$ of its original bulk, when a brown viscid sweet product is obtained. Expose this to the air for one or two days, when it crystallizes into bright yellow granules. This is known as sugar sand; decolorize this sand by charcoal.

Characters.—In greyish-white, hard, crystalline masses, yielding a gritty white powder without any odour and faintly sweet taste. Soluble in water (1 in 7), in boiling water (1 in 1), insoluble in alcohol or ether. Dose—10 to 30 grs.

Milk contains about 5 per cent. of it. In pharmacy it is used for triturating powders.

Kumyss, Kumiss—Cerevesia Lactis—A fermented liquor, obtained from cow's, mare's or camel's milk.

Preparation.—Add sugar of milk to fresh milk in an open vessel, beat it till it ferments, or add some acid to fresh milk to assist lactic acid fermentation. During fermentation, skim off caseine and butter, and collect the fermented whey. It contains 1 to 3 per cent. of alcohol, sugar, lactic acid, salts, carbonic acid and ether. Dose—2 to 4 fluid ounces.

Physiological action.—Milk is demulcent, nutritive and restorative. Exclusive milk diet, except for infants, leads in many cases to a coated tongue, foul breath, and unpleasant taste in the mouth. The bowels become constipated, but sometimes diarrhœa sets in, showing that the milk is not digested. The body loses its weight, urine becomes copious in quantity. The pulse is quickened and the arterial tension lowered. It is a proper food for infants till the age of 8 months. *Therapeutics.*—Given as the least irritating food in gastric disorders, as dyspepsia, gastric catarrh, ulcer and cancer of the stomach; in chronic intestinal disorders, as diarrhœa and dysentery; in

albuminuria, ascites, diabetes and typhoid and other acute fevers; also in cases of corrosive and other irritant poisoning. Ass's milk is extensively used as a remedy against cough, more especially when occurring in children and in old people and in chronic bronchitis, pertussis and consumption. Sometimes human milk has been recommended to grown-up people suffering from chronic asthma and consumption. Butter is demulcent. Given in irritation of the alimentary canal, in albuminuria and in diabetes. Ghee is used as food and also as an ointment base. It is locally anointed in irritability of the skin, used as an inunction in wasting diseases, and also rubbed during massage or for ordinary champooing. Plasmon is a valuable nutrient and stimulant. It is easily digested and wholly assimilable and is given in all wasting diseases. It is useful in dyspepsia, during convalescence from acute and chronic diseases when the vitality is impaired by long illness. It is very valuable in strumous and tuberculous diathesis, in marasmus and in neurasthenia. Eucasein.—It is very easily digestible, strengthening and nourishing, more assimilable than meat. Given during convalescence from acute and chronic diseases and to delicate children and others. Lactose is a uterine stimulant, tonic and diuretic like glucose, saccharose, caffein and theobromine; it is given in cardiac and renal dropsy. As an uterine stimulant it accelerates labour in child birth by restoring tone to the uterine relaxed muscles; also given in protracted labour after the os has been fully dilated. Kumyss.—A dietetic, nourishing and restorative agent, given in diabetes, in irritability of the stomach and in obstinate vomiting.

Sanguis Bovinus.—Blood of the ox or cow.

Vernacular.—Arab.—*Dam;* Burm.—*Thwe;* Hind.—*L'hu;* Pers.—*Khun;* Sans.—*Rakta;* Mar.—*Rakta;* Tam.—*Nethar, Niriti;* Tel.—*Rattamu, Rattam;* Guj.—*Lohi.*

Characters.—Blood is a red, opaque fluid of a peculiar odour. Sp. gr. 1055. It consists of blood corpuscles floating in a fluid called plasma. It coagulates on exposure to air, and separates into clot and serum.

Constituents.—It contains water 78 per cent., albumen 7 per cent., fibrin 2 per cent., red corpuscles 13 per cent., and alkaline salts 1 per cent., as chlorides, phosphates and sulphates of calcium and magnesium. The serum contains 10 per cent. of solids, of which 8 per cent. are albuminoids.

Sanguis Bovinus Exsiccatus—Extractum Sanguinis—Pulvis Sanguinis.—Desiccated blood ; defibrinated blood ; blood freed from fibrin.

To obtain it, stir up the blood with a stick, when the fibrin adheres to it. Evaporate the remaining fluid to dryness and powder. It occurs in blackish-red scales, soluble in water. Used as an enema (1 to 8) of tepid water. Dose—10 to 30 grs. Used as a restorative.

Sanguinol.—Defibrinated boiled down blood, mixed with hæmoglobin. It contains natural blood salts 46, oxyhæmoglobin 10, peptonised muscle albumen 44.

Actions and uses.—Tonic and restorative, used especially in excessive hæmorrhages, extreme anæmia, in cases of collapse due to post-partem hæmorrhage, in accidental hæmorrhage, and in cases due to loss of blood during operations.

Hæmol and Hæmogallol.—Two products of the reduction of Hæmatin or colouring matter of the blood by zinc and by pyrogallol, respectively.

Characters.—A fine, blackish (Hæmol) reddish-brown (Hæmogallol) powder, insoluble in the ordinary solvents, readily absorbed by the organic compounds. It contains iron. Given in wafers, gelatine capsules or chocolate pastilles. Dose—2 to 8 grs.

Actions and uses.—A directly assimilable hæmatinic tonic, readily converted into the colouring matter of the blood. It is given in anæmia, chlorosis, scrofula, rickets, chronic nephritis, diabetes and in convalescence from fevers, &c. It is given to debilitated people to improve the composition of degenerated blood. In tuberculosis of the lungs, combined with arsenic and strychnia it is given with benefit.

Hæmatogen.—A natural organic product. Exists as a purified and concentrated Hæmoglobin, flavoured with pure glycerine and Malaga wine—1 of glycerine to 5 of wine. Dose—1 to 2 drs.

A blood-former, rich in organically combined iron. It contains perfectly pure Hæmoglobin ; all the salts found in fresh blood ; compounds of phosphorus, as phosphates of sodium and potassium in their organic condition ; and serum, and its albuminous constituents in a concentrated form. It is not predigested, hence used without tendency to decomposition of the substances necessary for the building up of the tissues of the body.

Hæmoferrum.—A natural proteid compound of iron, prepared from fresh bullock's blood. Soluble in water and of a pleasant taste. It is non-styptic, neutral and non-constipating.

Fermanglobin.—A neutral albuminate, prepared from blood. It is Hæmoglobin, combined with iron and manganese. Dose—½ to 1 dr.

Actions and uses.—Hæmoglobin, Hæmatogen, Hæmoferrum and Fermanglobin are blood tonic, hæmatinic and restorative, also nourishing and strengthening. Given in anæmia, chlorosis, neurasthenia, scrofula, rickets, wasting diseases of children, in chronic catarrh of the stomach and bowels, and in convalescence from fevers and other diseases. As a restorative, given in diseases of the lungs. Do not cause constipation. Act better than peptonized preparations, cod-liver oil, iodide of iron, &c.

Hæmatin Albumen.—A blood food, containing dried albumen with a large quantity of iron.

Characters.—A dark-brown powder, without any odour or taste. Dose—1 to 2 drachms. Used as tabloids, called "Residuum Rubrum Tabloids."

Actions and uses.—A mild hæmatinic, digestive and assimilative, well borne even by the most irritable stomach. It does not constipate. Gives a reddish colour to the motions.

PACHYDERMATA.

These are non-ruminant animals, having thick skin. They are ungulate mammals or hoofed quadrupeds who do not chew the cud, *e.g.*, elephants, horses, swine, hippopotamuses, rhinoceroses, &c.

Proboscidea.—

Elaphas Indicus, E. Africanus. The elephant.

Parts used.—Teeth or tusks—ivory.

Habitat.—India, Burmah and Africa.

Vernacular.—Hind.—*Hathidant ;* Cing.—*Gallah ;* Arab.—*Sin-ul-fel ;* Guz.—*Hathi-na-danta ;* Malay.—*Gading-danta, Beram-danta ;* Pers.—*Dandan-i-fel ;* Sans.—*Hasthi-dânta ;* Tam.—*Dant-ani ;* Tel.—*Dontyeni, Yenuga ;* Burm.—*Hsen.*

Preparation.—Hathidant *Bhasma* obtained by calcination. Dose—5 to 15 grs.

Actions and uses.—Astringent given in leucorrhœa, also in jaundice.

Sus scrofa, B. P. Sus Indicus.—The hog.

Habitat.—All parts of the globe.

Vernacular.—Eng.—The Indian wild boar; Arab.—*Khansir;* Beng.—*Varaha;* Can.—*Handi, Mikka, Jewadi;* Hind.—*Jangli Soor, soor;* Malay.—*Babi, Babi alas Babiutan;* Sans.—*Varaha;* Tel.—*Pandi;* Guj.—*Dookar.*

Four important medicinal preparations are obtained from the hog :—

1. Adeps (Lard), B. P.
2. Adeps Benzoatus, B. P.
3. Pancreatic enzymes, and
4. Pepsinum (Pepsin), B. P.

Adeps Lard, B. P.—Purified fat of the hog. To obtain it, deprive the fresh fat of the abdomen of the pig, especially the fat over the mesentery, omentum and kidneys, of blood and its external membranes. Expose it to the air, then cut it into thin slices, beat it in a mortar, and reduce it into a uniform mass. To purify the mass, put it into a vessel surrounded by water and heat till the fat has melted and separated from the membranous matter, and strain. To remove the nauseous odour, add to every pound of lard, alum 15 grs. and common salt 30 grs.

Characters.—It is a soft, white, unctuous mass of a faint odour, but not rancid, and of a bland taste and neutral reaction. It forms a clear liquid at a very high temperature. Dissolves entirely in ether, benzin and bisulphide of carbon.

Constituents.—Olein 62 per cent. and palmitin, margarin and stearin 38 per cent.

Adeps Benzoatus, B. P.—Benzoated lard. It contains lard incorporated in benzoin powder 3 per cent.

Preparations.—CERATUM.—Cerate contains lard and white wax (70 to 30).

UNGUENTUM—Ointment.—Lard and yellow wax (80 to 20).

OLEUM ADEPIS—Lard oil.—To obtain it, express the fixed oil from lard at a low temperature, when the stearin is separated from the olein.

A colourless, pale-yellow, oily liquid, of a peculiar odour and bland taste, often adulterated with cotton oil and paraffin oil. Sometimes used as an ingredient in the preparation of Unguentum Hydrargyri Nitratis. Used as emollient, mostly used as an ointment base.

Acidum stearicum stearic acid—It is an organic acid existing as glyceride in animal fats and oils.

Preparation.—Boil beef tallow with potassium or sodium carbonate when sodium or potassium stearate (soap) is formed, and glycerin is set free. To the soap add sulphuric or hydrochloric acid and water, and apply heat when the fatty acids float on the surface of the liquid. To purify the acids, add hot alcohol and allow it to cool when stearic acid separates from oleic acid.

Characters.—It is a hard, white, glossy solid, without any odour and taste, soluble in ether and in alcohol (1 in 45), and insoluble in water.

Used as Glycerine suppositories, and in the preparation of stearates of various metallic oxides, such as zinc, copper, &c.

Actions and uses.—Emollient used as a substitute for wax. Stearates of zinc and copper are used as application in skin diseases.

Pancreatic enzymes.—Preparations containing the digestive principles of the fresh pancreas of the pig.

Preparation.—Pancreatinum-Pancreatin, Macerate fresh pancreas, in a weak solution of hydrochloric acid and add common salt, when pancreatin is obtained.

Characters.—A yellowish or greyish-white, impalpable, amorphous powder, of a peculiar odour and meat-like taste; soluble in water, insoluble in alcohol. Rubbed with sugar of milk or mixed with chloroform water, decomposition will be prevented. It digests albuminoids, converts starch into sugar, and is rendered inert with mineral acids. Dose—5 to 15 grs.

Constituents.—Pancreatic secretion is a combination of four distinct enzymes or unorganized ferments. These act only in neutral or alkaline solutions, and are destroyed by weak acids. These are—

AMYLOSIN or Pancreatic diastase which converts starch into dextrine and sugar.

A CURDLING FERMENT which acts like rennet, and curdles the caseine of milk.

TRYPSIN.—A Digestive Enzyme. It has powerful, peptonizing properties. It converts albumens into peptones in an alkaline or neutral solution. Used as a spray in diptheritic croup.

STEAPSIN.—An emulsifying ferment. It emulsifies and partly saponifies fats.

Preparations.—Liquor Pancreatis, Pancreatic solution, B. P.—Treat fresh pancreas of the pig with dilute spirit for seven days, and then filter. Dose—1 to 2 drs. Used with beef tea or gruel or as nutritive enemata.

Extractum Pancreatis or Zymine. It is used for peptonizing food, generally used mixed with sodium carbonate as powder, tablets or tubes. Dose—3 to 6 grs.

Pancreatine, a desiccated extract of pancreas. Used with sodium carbonate (4 to 1), to peptonize milk. Dose—2 to 4 grs.

Pancreatic emulsion.—Pancreatize lard, flavour it with oil of cloves, and emulsify. Useful in wasting diseases. Dose—1 to 4 drs.

Peptonized Foods.—These include—

Peptonized milk.—*See* milk.

Peptonized gruel.—Boil any farinaceous article till it becomes thick; add liquor pancreatis 1 dr. to every pint while still warm and again boil after two hours. By this method the starch of the meal is converted into sugar, and the albuminoid matters peptonized.

Peptonized beef jelly.—It is an extract of beef, the fibrin of which is converted into peptone by the pancreatic ferment. Dose—1 dr.

Physiological action.—Pancreatin possesses digestive, solvent and emulsifying properties. It curdles casein of milk, acts upon all kinds of food. It converts albuminoids into peptones, converts starch into dextrine and sugar, saponifies fats, and forms a perfect emulsion. Pancreatic digestion is only an intestinal operation. In the stomach the enzymes are destroyed by the acid juice. Pancreatin acts energetically in neutral or alkaline solutions. Hence, when given internally, it should be given in such form as to escape this destructive action in the stomach or to peptonize or predigest food before administration. *Therapeutics.*—These preparations are extensively used in dyspepsia, in weak digestion in the case of invalids, old persons and infants, as well as in those prostrated by fever and other exhausting diseases. Liquor pancreatis with sodium bicarbonate and water is generally added to nutritive enema and to beef tea or gruel. Trypsin is used as a spray in croup and diptheria.

Pancreatic emulsion supplies fat in an assimilable form. Under its use dyspepsia disappears, and the body gains in weight.

Pepsinum. Pepsin, B. P.—It is an enzyme obtained from the mucous lining of the fresh and healthy stomach of the pig, sheep or calf. The gastric secretion contains 2 ferments.

1. PEPSIN.—It changes proteids as fibrin and albumen into soluble peptones in the presence of an acid medium.

2. CURDLING FERMENT.—Like rennet, it curdles the casein of milk. It is mostly contained in the preparation known as essence of rennet.

To obtain pepsin, scrape the clean mucous coat of the stomach, dry the viscid pulp, and powder.

Characters.—It is a yellowish-brown or a greyish-white powder or pale-yellow, translucent grains or scales of a disagreeable odour and saline taste. Free from any trace of putrescence, and liable to absorb moisture from the air. Dose—5 to 10 grs. Various processes are employed, each producing pepsin of different digestive strengths.

Boudault Pepsin.—To prepare it add acetate of lead to the viscid pulp, pass sulphuretted Hydrogen over it to remove the lead. To the solution add a few drops of lactic acid and evaporate to the consistence of gum; finally add dry starch and reduce it to a fine powder. A fine white or light yellowish brown amorphous powder or yellowish translucent scales or grains of a faint saline, but not unpleasant odour and acidulous or saline taste. It has acid reaction, soluble in wine. Dose—2 to 5 grs.

Pepsina Porci—This variety is prepared from the stomach of the pig. Dose—2 to 10 grs.

Lactopeptine.—A proprietary preparation containing sugar of milk 320, pepsin 64, pancreatin 58, vegetable ptyalin or diastase 4, lactic acid 6, hydrochloric acid 6. One drachm will digest 8 ounces of albumen, fibrin, casein, and gelatin. Dose—10 to 15 grs., should be given after meals.

Pepsinium Saccharatum (Saccharated Pepsin).—Pepsine mixed with sugar of milk (1 in 9). One part digests 300 parts of egg albumen. Dose—5 to 20 grs.

Glycerinum Pepsini. Glycerin of Pepsin, B. P. (1 in 12)—Glycerin of pepsin contains pepsin, grs. 800, hydrochloric acid ms. 110, glycerine 12 fld. ozs. and water to make one pint. One drachm contains 5 grs. Dose—1 to 2 drs.

Peptenzyme.—An organic extractive. It contains active ferments and undeveloped enzymes of all the digestive organs or glands in their natural state. It digests all foods in acid, alkaline or neutral menstruum. Used as elixir, tablets, powder, pills, ointments, &c.

Peptone.—It is prepared from the muscular tissue which chiefly contains the proteids and albuminoids by subjecting it to artificial digestion with pepsin or trypsin or peptonizing it by hydrochloric acid and heat under pressure.

Characters.—A whitish or pale brown powder soluble in water.

Malto Pepsin.—A proprietary medicine, containing pepsin, malt extract, pancreatin, calcium lacto phosphate, &c. Dose—10 to 20 grs.

Actions and uses.—A valuable ferment and solvent. Given to assist gastric digestion especially in the atonic condition of the stomach. In cases of asthma depending upon dyspepsia marked improvement takes place by the administration of pepsin. It must be given after meals and mixed with dilute hydrochloric acid. As a dusting powder or ointment it may be used as a dressing for sloughy ulcers. Glycerinum pepsini is used as a solvent for diphtheritic membranes. To keep it well in a warm climate it is mixed with sugar of milk or starch. Such pepsins have a lower digestive power. It does not aid digestion of fats or carbohydrates.

Ingluvin.—It is analogous to pepsin. It is prepared from the gizzard of the domestic fowl (Pullus gallinaceus).

Characters.—A yellowish grey powder. It differs from pepsine in that its efficacy is not destroyed by alkalies. Dose—5 to 10 grs.

Actions and uses.—Digestive and solvent, used like pepsin; some prefer it to the latter drug. It is given in indigestion, obstinate vomiting of pregnancy and sea sickness.

Cetacea.—Cetaceous Family.—These animals have a pelvis, and hind limbs somewhat atrophied, body fish-like, with horizontal tail or flukes, fore-limbs short like fins, neck short, some of the cervical vertebræ anchylosed.

Physeter Macrocephalus. (The sperm whale)—**B. P.**

Physeter, a blow-pipe, a kind of whale with a pair of bellows. The sperm whale has a blow-hole near the edge of the snout.

Macrocephalus, macro long and cephalus a head. The animal has a long head.

SPERM WHALE is about 60 to 80 feet long with a very large head. In front of the cranium, near the upper jaw, there is a large cavity which contains a concrete fatty substance known as cetaceum or spermaceti. It is mixed with sperm oil or oleum ceti.

Habitat.—Indian Ocean, Pacific Ocean.

Part used.—Cetaceum, Spermaceti, B. P.

Vernacular.—Chin-Kingyu.

To obtain it expose the oily fluid to the air when it congeals into a yellow mass ; drain it in suitable bags and press to remove the oil ; melt the pressed cake in water, remove impurities, and the purified residue is spermaceti or cetaceum.

Characters.—A white translucent unctuous mass of the consistence of lard or white colourless inodorous scales of a crystalline fracture or a concrete fatty substance of a pearly lustre. It is reducible to powder by the aid of alcohol. Becomes rancid by exposure to the air. Has a bland and creamy taste like that of very fresh butter and neutral reaction. It is insoluble in water, soluble in fixed and volatile oils, ether, chloroform and boiling rectified spirit.

Constituents.—It contains cetylic alcohol combined with palmitic acid forming a fat cetin.

Preparations.—Charta Epispastica. Unguentum Aqua Rosæ, B. P., Unguentuns Capsici, B. P., Unguentum Cetacei, B. P. The last containing spermaceti 20, white bee's wax 8, almond oil 72, benzoin 2.

Emulsio Cetacei—The emulsion is obtained by mixing spermaceti with yolk of egg and almond oil or from its powder by rubbing it down with alcohol or almond oil.

Actions and uses.—Cetaceum. As a demulcent it is given internally in alvine and urinary irritations. As a base for ointments and cerates and as an emollient dressing it is used for blistered or excoriated surfaces and ulcers.

Ambra Grisea.—A morbid excretion found in the intestines or cæcum of the sperm whale.

Vernacular.—Eng.—*Ambergris* ; Arab.—*Amber* ; Burm.—*Payen-anbhat* ; Sing.—*Mus Sumbra* ; Guz.—*Ambara* ; Pers.—*Sahabula* ; Tam.—*Min Ambar* ; Lat.—*Ambra.*

It is a morbid excretion in the form of a concrete mass found floating on the Red Sea or cast on the shores of Africa. A single whale's excretion has been found to weigh 750 lbs.

Characters.—In irregular masses, seldom white, often darkish brown or grey, or of a pink colour marked with streaks and spots. The odour is peculiarly fragrant, resembling that of musk. It is nearly tasteless. It melts in hot water, but not in cold ; soluble in ether, fats, volatile oils and hot alcohol.

Constituents.—It contains ambrein 85 per cent., a little of balsamic extractive and ash. Dose—5 to 15 grs., used as confection.

Actions and uses.—Stimulant and antispasmodic ; used in general weakness and nervous debility ; also given in high fevers with insensibility or violent delirium, and in the collapse stage of cholera, plague and other infectious diseases.

AVES.

Birds.—Among the vertebrata, birds rank next to Mammalia. They have fixed lungs, a complete double circulation, hot blood, heart with four chambers, oviparous reproductions consisting of eggs formed of yolk and albumen and covered by a calcareous shell. No teeth, with horny beak, two wings which are modified front limbs, and two hind limbs which bear feathers.

Vernacular.—Arab.—*Murgh, Tair*, Burm.—*Hnet* ; Hind.—*Chireah, Churi*; Malay.—*Burung, Manuk, Paksi*; Pers.—*Parinda* ; Tam.—*Patche Kurvi* ; Tel.—*Pitta, Pitto* ; Guz.—*Pankheru.*

This order includes domestic fowls, grouses, pheasants, quails, partridges, turkeys, guineafowls, &c.

Gallinæ.—Gallinaceous family.

Gallus Bankiva—Var. Domesticus. Domestic cock and hen.

Gallina.—A hen, a cock.

Parts used.—Yolk, albumen, and the calcareous shell of the hen's egg.

Habitat.—Domesticated in Java and Cochin-China ; all parts of the globe.

Vernacular.—Arab.—*Baiza Baida* ; Beng.—*Anda* ; Can.—*Matte Tette, Gadda* ; Eng.—*Egg* ; Guz.—*Indu-Bedûn* ; Hind.—*Kaota, Unda* ; Tam.—*Matta* ; Tel.—*Gadda.*

Albumen ovi—

Eng.—*Egg. Albumen—white of egg*; Bomb.—*Beda-ni saphedi*; Guz. —*Indani sapdeti.*

Ovi vitellus.—

Eng.—*Yolk*; Guz.—*Bedâ-ni dâl.*

Testa ovi.—

Eng.—*The egg shell*; Guz.—*Bedânâ kotalân.*

Characters.—Albumen. It is a colourless glairy viscid fluid without any odour or taste. It is coagulated by heat. It clarifies honey, syrup, &c.; in weight it is about 5 drs. in one egg. *Vitellus*—Yolk of egg is a dense viscid yellow or reddish yellow opaque alkaline fluid. It consists of oil mixed with water and albumen. It is contained in a sac or bag. It is without any odour, and has a bland taste. Agitated with water, it forms a milky emulsion. It is coagulated by heat and by alcohol. *Testa Ovi.*—The egg shell is a white, hard, fragile calcareous substance encasing the white and the yolk.

Constituents.—Egg contains albuminous matter 55, fat 40 and mineral matter 5. The white of egg contains water 82 to 85 p. c. and solids 15 to 18 p. c., mostly albumen; little mucus fat, sugar; extractive matter, ash 0·65 p. c., which consists of alkaline salts, chiefly the chlorides of potassium and sodium and carbonates sulphates and phosphates of calcium, magnesium and iron. The yolk contains water 50 p. c., sulphur and phosphorus, vitelline 16 p. c. (a proteid similar to caseine and mixed with albumen); fat, 30 p. c., inorganic salts, 1·5 p. c.; traces of cholesterin, ·5 p. c.; coloring matter, lactic acid, lecithin and sugar. Egg Shell contains calcium carbonate 90 p. c., calcium and magnesium phosphates 2 p. c., traces of sulphur and iron, some organic matter 1 to 5 p. c., and salts as the chlorides, iodides, sulphates, and phosphates of potassium, calcium and magnesium.

Preparations.—Mistura spiritus vini Gallici, B. P., contains Brandy 4 ozs., Cinnaman water 4 ozs., refined sugar 4 drs., two yolks of eggs. Dose—1 to 2 ozs.

Glyceritum vitelli—Glycerin of Yolk of Eggs, Glyconin contains yolk of egg 45 and glycerine 55.

A yellow oil (a native preparation).—To prepare it, boil the egg, remove the white, rub the yolk with hot movara—a country

liquor, or with spirit of wine or brandy, and remove the oily substance which may float on the top. This is used as an embrocation.

THE SHELL is used in the form of ash, which is prepared by incineration of the shell.

Physiological action.—Emollient, demulcent, laxative and nutritious. Egg is a complete food. It contains all the elements required by the blood. The white of egg is useful in cases of poisoning by corrosive sublimate, soluble salts of lead and zinc, creosote, &c. In poisoning by other acrid metallic salts it acts mechanically by enveloping the poisonous particles and also coating the mucous membranes of the stomach and intestines. Mixed with hot brandy and alum its paste is used as an embrocation or *lep* (plaster) in erysipelas. The yolk of egg is demulcent, more nutritious than the white and, in large doses, laxative. Locally with lime or mixed with hydrargyri nitrico oxidum it is used as a lep or plaster and applied to plague and other buboes and to boils to promote suppuration. As a restorative mixed with brandy it is given internally to the weak and anæmic persons ; also used in dyspepsia ; used for emulsifying oils oleo resins and resins.

The oil of yolk is used as an embrocation over chronically stiff joints and as a dressing for burns, scald and abrasions, and as an emollient in removing or softening desquamations of the skin in fevers, &c., and in removing cerumen in the ear.

The ash is antacid and styptic, and used as a powder in gravel and in cases of cancer. In the latter disease it promotes calcarious degeneration and thus hardens the growth. As a styptic it is made into a paste and applied to bleeding surfaces.

Birds of game.—By the *Vaids* and *Hakims* birds of game, such as pigeons, sparrows, &c., are used as medicinal agents. In some cases their soup is given to the weak, the exhausted, and the paralysed, and also to the dyspeptics. Sometimes the whole pigeon is boiled and applied hot over the affected paralysed limbs. Very often live birds, such as fowls, are applied locally over poisoned wounds and snake-bites. The anus of the bird is firmly pressed over the bites or wounds, and, it is believed, the poison is sucked out as if by dry cupping, and as many as half-a-dozen of these birds are used at one time for the purpose ; as a rule, they all die.

Pisces.—*Fishes.*

Vernacular.— Arab.—*Samkat ;* Burm.—*An-gna ;* Hind.—*Matchhi, Mâtchli ;* Malay.—*Ikan ;* Pers.—*Mâhi ;* Tam.—*Min ;* Tel.—*Châpu.* Guz.—*Matchchli.*

Characters.—Fishes are oviparous animals that have fins and scales or plates. They breathe by gills, live in water, and swim instead of walking or flying ; have a complete cranium and a lyriform shoulder-girdle.

Sturiones—Sturionian Family—

Acipenser Huso and other sturgeons.

Acipenser.—From Aci a swift and pinna a wing or fin.

Huso—A bladder from Huyzen blas.

Isinglass or Ichthyocolla.—The swimming bladder is so called as by its expansion and contraction these fishes swim. It contains oxygen and nitrogen.

Habitat.—Coast of Europe, Caspian and Black Seas.

Parts used.—The swimming bladder or sound found in front of the abdomen of several species of sturgeons prepared and cut into fine shreds called Isinglass.

Vernacular.—Arab.—*Gerius Samâk ;* Duk.—*Lela machhi kâ siras ;* Hind.—*Machhi ká siras ;* Pers.—*Serasham-e-Mahi ;* Tam.—*Min-vajaram ;* Tel.—*Cheppa vajaram ;* Malay.—*Palog pongikan, Ari-ikan.*

Manufacture.—Collect, split open, and wash the membranous bag, remove the outer coating by scraping, expose it to the air to dry, and stretch into sheets. These are known as the leaf isinglass. If several sheets are folded together, it is known as the book isinglass. Where each bladder is folded up around pegs, it is called short or long staple isinglass. It is generally cut into fine shreds or ribbons and folded into bundles.

Characters.—Horny, semi-transparent rolls or sheets of a pearly-white or yellowish colour without any odour or taste, nearly soluble in boiling water and in boiling alcohol. An aqueous solution of 1 in 32 of boiling water forms on cooling a good, transparent, hard jelly. With tannic acid it yields a yellow-white precipitate. Not so with gallic acid. It is a constituent of animal tissue, chiefly of bones. In composition it is similar to albumen.

Constituents.—Pure gelatin, an insoluble membrane 5 to 30 per cent. and ash 0·5 per cent.

Preparation.—Emplastrum Ichthyocolla—Isinglass plaster or court plaster. Contains isinglass 10, alcohol 40, glycerin 1, and hot water and then applied on one side of the cloth. Used also as jelly and congee.

Actions and uses.—Nutritious, demulcent and emollient. Mixed with starchy food and with soups, it is given in chronic diarrhœa in children and for invalids. As an emollient, the plaster is used for cuts and abrasions.

American isinglass obtained from Gadus merluccius. Hake-fish and from Otolithus regalis, Weak-fish. Occurs in thin sheets or ribbons.

Japanese or Chinese Isinglass, otherwise known as Agar Agar.—A vegetable product obtained from Eucheuma spinosum, Gracilaria lichenoides, and other algæ.

Animal Gelatin.—It is obtained from gelatinous tissues, such as skin, tendons, ligaments, cartilages of bones, &c. It is prepared by boiling these tissues in water for some length of time and drying the resulting jelly in the air in the form of translucent sheets, layers or shreds.

Characters.—It forms colourless solution in hot water, without any odour. Solidifies into a jelly on cooling. Is insoluble in alcohol or ether. The solution in hot water is not precipitated by dilute mineral acids, but is precipitated by tannin.

Constituents.—Carbon 50 per cent., nitrogen 18, hydrogen 7, oxygen 24, sulphur 0·5.

Used as calf's feet jelly. It is a basis for suppositories, pessaries, pills, lozenges, &c.

CHONDRIN.—It is obtained from the cartilages of the ribs and other non-ossifying cartilages, and is analogous to gelatin. The watery solution of its jelly is precipitated by alum, acetate of lead, ferric salts, acetic and mineral acids, but not by tannin and mercuric chloride. Used as emollient, nutritive and protective.

Teleosteæ—Teleostean Family.—These fishes have a well-ossified skeleton and fins. The brain is well developed, and the backbone is composed of ossified vertebræ.

Gadus Morrhua, Common Cod-fish, B. P.—

Part used.—The fixed oil from the fresh liver. Oleum jecoris aselli

Cod liver oil—Oleum morrhuæ, B.P.

Habitat.—Atlantic Ocean, Newfoundland, Norway, Nova Scotia, Britain, Ireland.

The vernacular expressions for the oil of different fishes are formed by prefixing the names of the fish to the respective vernacular name of the oil.

Heat fresh liver with water, separate the oil, strain, and collect it in butts in a cool room. Next freeze the oil with ice, and express or filter through canvas bags, thus separating the yellow residue, stearine and liver debris.

Characters.—A pale yellow thin liquid; odour repugnant and slightly fishy; taste nauseous or bland and fishy. Has a faintly acid reaction. It becomes rancid by exposure to air. It is readily soluble in ether, chloroform and carbon sulphide, slightly so in alcohol. With alcohol it yields 3 to 6 per cent. of the extract known as morrhuol. It is often adulterated with other fish oils, fixed oils, paraffine oil, &c. Dose—1 to 4 drs.

Various substances are used to disguise the taste and smell of the oil. These include oil of bitter almonds (1 in 25), porter, soup, orange peel, common salt, &c., often salted herring is chewed before and after taking it. To relieve nausea or vomiting, lime juice, strong coffee, or powdered bismuth may be added.

Constituents.—Chiefly olein, margarine, and palmitin with stearin; fixed bases as aselline and morrhuine, two principles—gaduin and trimethyl-amine; volatile bases Butylamine, amylamine, morrhuic acid, traces of chlorine, iodine and bromine, phosphorus, sulphur, cholesterine, and a mixture of formic and butyric acids and various biliary principles.

Morrhuine.—Constitutes $\frac{1}{3}$ of the total alkaloids. The most important active principle of the oil.

Gaduin.—A peculiar substance, very insoluble in ordinary salvents, but soluble in sulphuric ether, giving a blood-red colour to the solution.

Preparations.—Cremor eucalypti compositus, an emulsion (50 per cent.) of codliver oil and 5 ms. of the oil of Eucalyptus for each drachm. A very elegant form of administering cod liver oil. Highly recommended in phthisis. Dose—1 to 2 fld. drs.

Emulsio Olei Morrhuæ.—It contains codliver oil 8 ozs., yolk of two eggs, tragacanth 16 grs., elixir of saccharin 1 dr., tincture of benzoin 1 dr., spirit of chloroform 4 drs., oil of bitter almonds 8 ms., and water to make 16 ozs. Dose—2 to 8 drs.

Emulsio Olei Morrhuæ et Hypophosphitum. Dose—2 to 8 drs. Contains hypophosphites of sodium and calcium, 1 per cent. of each.

Oleum Morrhuæ cum Æthere—Codliver oil 2 drs., ether 10 ms.

Oleum Morrhuæ cum Creosoto.—Contains 0·125 per cent. of creosote with saccharin. Dose—1 to 4 drs.

Oleum Morrhuæ Phosphoratum, Phosphorated codliver oil.—Codliver oil 20 ozs. and phosphorated oil 160 ms. Contains $\frac{1}{100}$ of a grain of phosphorus in one drachm of the oil.

Morrhuol.—A bitter extractive. To obtain it, mix alcohol and codliver oil, decant, and distil off the alcohol. It is an acrid, bitter, aromatic liquid, containing phosphorus, bromine and iodine in peculiar combination.

Used as capsules containing three grains in each. Dose 1 to 2 capsules.

Physiological action.—The oil is alterative, demulcent and nutrient. It is the most easily digestible of the fats. It increases the red-blood corpuscles in the blood, and promotes healthy cell formation of tissues. *Therapeutics.*—Useful in scrofulous and tubercular affections, tabes mesenterica and chronic hydrocephalus; in wasting diseases, such as rachitis, chronic phthisis, chronic bronchitis and chronic rheumatism; also in epilepsy, chorea, and convalescence from acute diseases. Morrhuine is the appetizing or digestive agent. It is also a diaphoretic and diuretic. Morrhuol is antitubercular, stimulant and diaphoretic. Being free from oily matter, it does not derange the stomach; under its use the appetite improves. It allays cough, arrests night-sweats, and stops hæmoptysis, and the body gains in weight.

Squalus Carcharias.—White Shark. Cybium Commersonii, "The Seir fish," and other varieties.

Habitat.—Sea coast towns of India.

Part used.—The oil extracted from the liver. Oleum squalæ—Shark liver oil.

Preparation.—Heat fresh livers with water, and extract the oil.

Characters.—Fine, amber-coloured, oily liquid, with a fishy odour and strong disagreeable taste. Left for a time, it deposits a white granular substance stearin, to which the name of squalin has been applied. Dose—1 to 4 drs.

Constituents.—It is richer in iodine and phosphorus than codliver oil, but contains less bromine and sulphur.

Used as emulsion. Dose—1 to 2 drs.

Actions and uses.—Nutrient, demulcent and alterative; given in cachexia, consumption, atrophy of body from any cause, whooping cough, and other lung affections, and in chorea, epilepsy, rheumatism, and leprosy.

Raja Batis.—

Habitat.—France, Belgium.

Part used.—The oil from the liver—Oleum Rajæ. Ray oil, skate oil.

Characters.—A pale yellow viscid liquid, without any odour or of a less disagreeable odour than that of the cod fish-oil or shark oil.

Actions and uses.—It contains more of iodine than codliver oil. As an alterative tonic, it is used in scrofula, goitre and in syphilitic cachexia, &c. Dose—½ to 1 dr.

Thaleicthys Pacificus.—Candle fish. A small fish.

Part used.—The oil procured from the fish Oleum Eulachon.

Habitat.—British Columbia.

Vernacular.—India—Oolachon, Eulachon. Eng.—Eulachon oil.

Constituents.—It contains a large amount of pale straw-coloured oil, a trace of iodine, and a large percentage of paraffin, to which it owes its therapeutic value. Dose—1 to 2 drs.

Actions and uses.—It is used as a good substitute for codliver oil, and given to promote nutrition in scrofulous and tuberculous affections.

Invertebrata.—These have no spinal column.

Insecta, Insects.—These are small animals that have one pair of antennæ, three pairs mouth organs. They breathe by means of tracheæ which open by spiracles along the sides of the body; they are generally many-legged (myriapods) or six-legged (hexapods).

Hymenoptera.—These include insects such as bees, mosquitoes, wasps and ants. These animals have membranous four wings, with a dark spot on their front side. The tongue or lingua is converted into an organ of sucking honey, liquid food, &c. They have superior structural developments and instinctive faculties. They are carriers of poison from one place to another, and introduce it under the human skin by pricking it with mandibles.

Apis Mellifica, B. P.—The hive or the honey bee.

Habitat.—Most parts of the globe. There are 2 medicinal products prepared by the bee. These are—(1) honey, (2) wax.

Mel.—Honey. A saccharine secretion deposited by the insect in the honeycomb.

Vernacular.—Eng.—*Honey;* Arab.—*Injubin, Asatul-nahl;* Bur.—*Pya-ya;* Cing.—*Mipanny;* Guz.—*Madha;* Hind.—*Sentee, Madha, Shahad;* Malay.—*Madu ayer, Maddu mamsan labah;* Pers.—*Shahad, Angabina;* Sans.—*Madha;* Tam.—*Tayn, Teyna;* Tel.—*Tayu, Teyna.*

Honey is secreted by the nectaries of flowers, and is sucked therefrom by the bees and then stored up in the comb. The finest honey is the virgin honey which drains itself from the comb. That which is freshly procured from a hive is of the best quality.

Characters.—Honey when recently separated from the honeycomb is a viscid, semi-translucent liquid, of a reddish-brown, darkish, or a light yellowish-brown colour, of a heavy aromatic or date-like odour (odour dependent in part on the flowers from which it is obtained) and of a sweet acrid taste. After a time it becomes opaque and crystalline.

Constituents.—Grape sugar or dextrose which becomes crystalline; fruit sugar or levulose which remains liquid; wax, volatile oil; proteids, mucilage, colouring matter, formic acid and ash. Sometimes pollen grains are found suspended in honey.

Preparations.—Mel. Depuratum, B. P.—Clarified Honey.

Melt honey in a water bath, strain while hot through flannel. This removes organic impurities which render the honey liable to decomposition. It is a viscid, translucent, yellowish liquid, becoming crystalline and opaque after a time. Odour peculiar. Taste sweet.

Oxymel, B. P.—Contains acetic acid and clarified honey (1 to 8). Dose—1 to 2 fld. drs.

Oxymel Scillæ—Oxymel of Squill, B. P.—Contains squill, acetic acid, clarified honey and water. Dose—½ to 1 dr.

Ceromel.—Contains clarified honey 4 ozs. and yellow wax 1 oz. Mix with the aid of heat and strain.

Mel Boracis, B. P.—Borax 1, clarified honey 8, and glycerine ½.

Confectio Piperis, **B.P.**—Confection of pepper. Contains black pepper 2, caraway fruit 3, and clarified honey 15. Dose—60 to 120 grs.

Aqua Mellis—Honey water.—Take yellow sandalwood shavings 16, alcohol 640, macerate. Remove alcohol, add rose and orange flower waters 160 of each, shake well, decant, and add to this the alcohol set aside. To this mixture add oil of lavender 2, oil of cloves 2, oil of bergamot 1, oil of nutmeg ½, oil of sandal ½.

Confectio Scammonii and Confectio Terebenthinæ.

Actions and uses.—Emollient, slightly laxative, and nutritive. As a demulcent, honey and warm barley water are given in bronchial affections, troublesome coughs and sore throat; often used as a flavouring agent in cough mixtures. Externally it stimulates the mucous surfaces, relieves dryness of the mouth, and facilitates swallowing. A paste of it with wheat flour or with lime is used to promote maturation of boils, carbuncles and buboes. It is a good emollient application for cracks, fissures and sore nipples. As a mild counter-irritant, honey and quick-lime are applied to the temples for headache and to the painful joints. With alum it forms a good local application for contusions. It is a nice vehicle for powders and other nauseating medicines.

Cera Flava, Yellow bee's wax, B. P.—A peculiar concrete substance, obtained from the honeycomb of the hive bee.

Vernacular.—Eng.—*Yellow wax*; Arab.—*Shuma ;* Guz.—*Moma, Mina ;* Hind.—*Pila, Moma*; Pers.—*Moma*; Sans.—*Siktha, Madhujama ;* Burm.—*H'pa-roung;* Malay.—*Lilin;* Cing.—*Miettie ;* Tam.—*Ten Mashacu, Mellugu ;* Tel.—*Mynum.*

Wax exists in the pollen and leaves of many plants, chiefly the wax-myrtle. It is extracted by the honey bee, and used in the construction of the honey comb.

Manufacture.—Squeeze or press the comb when the honey is extracted. Melt it in hot water, remove the impurities, and allow it to cool. Repeat this process several times, and then cast in moulds.

Characters.—A yellowish solid mass, harder than butter, breaking with a granular fracture; odour honeylike and agreeable; taste faint and balsamic. It is soluble in ether (1 in 50), chloroform (1 in 4), and in boiling alcohol and various oils as oil of turpentine, &c. Insoluble in water, very sparingly soluble in cold alcohol (3 per cent.) It is not unctuous to the touch.

Constituents.—Hydrocarbons 12 to 15 per cent., cerolein, cerinor, cerotic acid which crystallizes from boiling alcohol, myricin, or myricyl palmitate, ceryl alcohol, &c.

Myricin is a principal constituent, and occurs in acicular crystals, soluble in hot ether, almost insoluble in boiling alcohol. By the action of potash it is converted into palmitic acid and myricil alcohol.

Preparations.—Unguentum Picis liquidæ, B. P. Tar ointment—contains tar and yellow bees-wax (5 to 2). Unguentum Resinæ, B. P., contains resin, yellow wax, olive oil and lard. Unguentum Staphisagriæ, B. P., contains stavesacre seeds 2, yellow wax 1, and benzoated lard 8½. Emplastrum Picis, B. P., Pitch plaster, contains Burgundy pitch 26, frankincense 13, resin 4½, yellow bees-wax 4½, olive oil 2, water 2. Emplastrum Menthol, B. P., Menthol plaster, contains menthol 1½, yellow bees-wax 1, and resin 7½. Emplastrum Calefaciens, B. P., *see* Cantharidis. Emplastrum Cantharidis, *see* Cantharidis. Phosphorus pills—*see* Phosphorus.

Cera Alba, B. P.—White wax.

Bleach the yellow wax by exposing it to light, air and moisture.

Characters.—It exists in circular, translucent cakes or masses harder, and whiter than the yellow variety. It has an insipid taste and a slightly rancid odour.

Preparations.—Unguentum simplex, white wax 2 ozs., benzoated lard 3 ozs., almond oil 3 ozs., ceratum simplex contains white wax 30 per cent. ceratum camphoræ 30 per cent., ceratum cetacei 30 per cent., ceratum resinæ 15 per cent., ceratum cantharidis 18 per cent.

Unguentum, cetacei, spermaceti ointment, **B. P.**—Contains spermaceti 20, white bees-wax 8, almond oil 72, and benzoin powder 2.

Unguentum Aquæ Rosæ, **B. P.**—Rose-water ointment.—Contains white bees-wax 1½, rose water 7, spermaceti 1½, almond oil 9, and oil of rose $\frac{1}{60}$.

Mina tela.—Boil over a fire a mixture of yellow wax, common salt, honey and sand, and filter and cool the filtrate.

Characters.—It is an oily fluid, sometimes found as a solid mass of a brownish-dark colour.

Actions and uses.—Wax resists the action of many chemical agents. It is non-irritating, emollient and demulcent, chiefly used externally as an ointment base and in the preparation of plasters, cerates, &c. The ointment is applied for ulcers. The *min tel* is soothing and protective; largely used by the natives as a stimulant application for indolent and other ulcers in the rectum, in diarrhœa and dysentery, especially where ulcers are suspected to exist. It is also used for painful rheumatic joints.

Hemiptera—Hemipterous family.

Hemipterous—Half-winged; Insects with fore-wings which are partly membranous and partly coriaceous. They include bugs, lice, &c.; they are hexapod, having a jointed proboscis and 4 sharp stylets for sucking and piercing the human skin. They feed on animal blood or on juice of plants.

Coccus Cacti.—Cachineal insect, B. P.

Coccus, a grain or berry or kernel. The insect resembles a grain.

Cacti, to feed upon cactus, a prickly plant. The insect feeds upon a species of cactus.

Cochineal—Scarlet. The colour of the insect.

Parts used.—The dried bodies of the fecundated female insect reared on Nopalea coccinellifera, Salm Dyck and on other species of Nopalea.

Habitat.—Mexico, Teneriffe.

Vernacular.—Eng.—*Cochineal insect*; Guz.—*Kiramaja*; Pers.—*Kiramija*; *dânaha*; Tam.—*Cochinil puchi*; Tel.—*Cochinil purugu*; Chin—*Ya-lau-mi.*

The dried insect is oval in outline, plano-convex, about 2 lines long, transversely wrinkled, colour black, purple or greyish-white. Grey colour is due to the presence of a white powder resembling fine wool. It quickly becomes black when exposed to heat.

Manufacture.—Collect the insects from the branches of the cacti, crush them, and immerse in boiling water. When dry, they can be easily reduced to powder. Dose—1 to 10 grs.

Constituents.—Carmine or carminie acid 10 per cent., wax (coccerin) fatty matter 18 per cent., moisture 6 per cent., salts, and ash 3 to 5 per cent.

Carmine prepared from the insect occurs in the form of small grains or as brilliant red powder, with a faint odour, a bitterish and

warm taste. It tinges the saliva violet red. It is soluble in water and alcohol, sparingly so in ether, but entirely soluble in ammonia water. It has acid properties, and hence called carminic acid Used only as a colouring agent.

Wax (coccerin) forms a grey covering of cochineal.

Fat consists of myrestin, liquid fat and fatty acids.

Preparations.—Glycerinum Carmini, glycerine of carmine. Carmine 3, ammonia water 4, water 3. Dissolve and add glycerine 18.

Chloral Carmine.—Mix carmine 2, absolute alcohol 20, hydrochloric acid 2. Apply heat, then add chloral hydrate 25. Cool and filter.

Liquor Carmini.—Solution of carmine (1 in 10).

Preparations of Cochineal.—Liquor Cocci, Liquid cochineal.—Cochineal 1, potassium carbonate 1, water 8. Heat it and add potassium tartrate 1, potash alum 1. Strain and add water to make the whole 8. When cold, add chloroform ½ per cent. by volume.

Tinctura cocci, Tincture of Cochineal, B. P. (1 in 10). Dose—5 to 15 ms. Tinctura cardamomi composita, B. P. Dose—½ to 1 dr. Tinctura cinchonæ composita, B. P. Dose—30 to 60 ms. Infulsum cocci (1 in 40). Dose—½ to 1 oz.

Actions and uses.—Stimulant, diuretic and antispasmodic. Used in neuralgia, whooping cough, scanty urine, &c. Its chief use, however, is as a colouring agent and for staining microscopic specimens.

Coleoptera.—Coleopterous family. Sheath-winged insects.

These are insects having a membranous posterior pair of wings, sheathed by the hardened anterior pair called elytra. These when folded together form a complete covering for the body. They include beetles, weevils, &c. Guz.—*Killân, yer.*

Cantharis Vesicatoria, Cantharides, B. P.

Syn. *Lytta, Spanish fly or Blistering fly, vesicatory beetle.*

Parts used.—The whole dried beetle.

Habitat.—Russia, Sicily, Hungary.

This variety is not obtainable in India. The genus mylabris cichorii is common in the Dekkan, and is substituted for the Spanish fly.

The beetles swarm upon trees and shrubs of oleaceous or capri foliaceous order, such as ash, white poplar, lilac, honeysuckle, elder, &c. Persons, masked and gloved, collect them early in the morning, by spreading pieces of cloth under the trees. They shake or beat the trees with poles, when the beetles fall upon the cloth, and are

gathered. They are killed by plunging them in hot water, in vinegar, or in oil of turpentine, and dried in the sun.

Characters.—They are about one inch long and one-fourth of an inch broad; colour dark-brown or shining green; have a strong and disagreeable odour, resembling that of mice, and a burning taste. The powder is greyish brown containing shining green particles. Dose—$\frac{1}{16}$th to $\frac{1}{2}$ grain.

Constituents.—An active principle Cantharidin, fat, an odourous compound, fatty and oily matters, various extractives, salts, and ash 6 to 8 per cent.

Cantharidin.—It is the blistering principle and resides in soft parts. To obtain it, exhaust the powdered flies with chloroform, and evaporate the solution. The colouring matter and fat adheres to the crystals, which may be removed by adding carbon disulphide to the extract. The cantharidin which remains may be redissolved in chloroform and crystallized.

Characters.—White crystalline scales, sparingly soluble in water, soluble in acetone, alcohol, ether, chloroform, benzene, acetic ether, glacial acetic acid, fats, and volatile oils.

Preparations—Linimentum Crinale.—To prepare it dissolve cantharidin 1 gr. in acetic ether 6 drs. by the aid of heat, and add alcohol 3 ozs., castor oil 1 oz., and oil of lavender 15 ms.

Used in promoting the growth of hair.

Potassii Cantharidas.—Dissolve catharidin 10, potassium hydroxide 5¾, and water 200 by heat, and allow it to crystallize on cooling. In minute white needles, soluble in water (1 in 25). Used in lupus and as a treatment of tuberculosis. Dose—$\frac{1}{150}$ gr. to $\frac{1}{100}$ gr.

Preparations.—Acetum cantharidis, Vinegar of cantharides, B. P. (1 in 10 of 50 p. c. of acetic acid).

Cantharides bruised 2 ozs., glacial acetic acid 2 fld. ozs., acetic acid 18 fld. ozs. It contains 2 ozs. to the pint.

Anodyne Vesican.—Mix camphor 20 and chloral hydrate 30. Apply heat. To the melted mass add cantharides 10, and strain.

Collodium Vesican, Blistering collodion, B. P.—Contains pyroxilin $\frac{1}{2}$ oz. and blistering liquid 20 fld. ozs.

Charta Epispastica, Blistering paper.—Paper spread with a composition of white wax 4 ozs., cantharides powder 1 oz., spermaceti 1½ oz., Canada balsam 2 drs., olive oil 2 fld. ozs. and resin 6 drs.

Emplastrum Calefaciens, Warming plaster, B. P.—It contains cantharides 4 ozs., yellow bee's wax 4 ozs., resin 4 ozs., oil of nutmeg 4ozs., resin plaster 52 ozs., soap plaster 32 ozs. (1 in 24).

Emplastrum Cantharidies, Cantharides Plaster, B. P.—Cantharides 12 ozs., yellow wax 7½ ozs., lard 7½ ozs., resin 3 ozs., soap plaster 4 ozs. (3½ in 10).

Liquor Epispasticus, Blistering liquid, Linimentum Cantharides, B. P.—Cantharides 10 ozs., acetic ether a sufficient quantity to make one pint of the liquid. Contains Cantharides 1 oz. in 2 fluid ounces.

Tinctura Cantharides, B. P. Tincture of Cantharides (1 in 80). Dose —5 to 15 ms.

Unguentum Cantharidis, Cantharides Ointment, B. P. (1 in 10), of benzoated lard.

Physiological action.—Its action is chiefly directed to the bladder. Locally rubefacient and vesicant. As blistering agent it stimulates at first; but, if kept too long, it depresses the system. The fluid discharged is serum, containing albumen and blood. Internally in small doses it is stimulant, diuretic, aphrodisiac, and emmenegogue. It stimulates the whole or part of the general system, prevents accumulation of inflamed exudations, re-calls suppressed discharges, and is dipletory. In large doses it is an acrid, irritant poison, producing vomiting, bloody stools, scanty urine passed with pain, swollen genitals, and great depression of spirits with convulsions, coma and death. In pregnant women it leads to abortion. Therapeutics.—Internally it is given in chronic vesical catarrh, gleet, and seminal weakness; as a sexual intoxicant to promote virile powers, also in gonorrhœa, atony of the bladder, leucorrhœa, menorrhagia and hectic fever; in diabetes, dropsy and albimenuria. Locally as a blister it is applied to the chest in pleurisy, pneumonia, &c., to joints in acute rheumatism, in gleet under the penis, in leucorrhœa over the sacrum. In typhoid fevers, in apoplectic condition, in congestion of the brain and in meningitis over the nape of the neck, and in inflammation of the eyes and in otorrhœa to the back of the ear. It is also used in nervous and spinal affections, in epilepsy, paralysis, in neuralgia such as sciatica, &c.; also in dropsical affections as hydrothorax and hydrocephalus. In arthritic enlargements its action is marked; as a hair lotion in alopecia it is used with benefit. The stranguary resulting from the use of a blister may be avoided by sprinkling the plaster before using it with spirit of camphor or powdered camphor or sodium bicarbonate.

To prolong the sore, apply Basilicon ointment (ceratum resinæ) to be followed by savine or mazerium ointment. Blistering fluid is more powerful and more rapid in its effects than acetum cantharides. The warm plaster is a stimulant application to indolent tumours, enlarged glands, and to arthritic enlargements.

Mylabris Cichorii, M. Phalerata.—M. Trianthema, Chinese blistering fly.

Habitat.—Throughout India, China, Southern Europe, South and East of Asia.

Part used.—The dried insect.

Vernacular—Hind.—*Teli makhi, Telini;* Chin.—*Pan mau;* Duk.—*Zerangi, Budhoki serangi;* Tam.—*Puist-tarinai;* Tel.—*Ejaloo.*

Characters.—The insect is about 1 in. long and ¼ in. broad. The elytra or wing sheaths are long and faintly yellow, and have three large zigzag black bands. It contains cantharidin 1 to 2 per cent.

Preparations—Tincture (1 in 80). Dose 5 to 10 ms. Liquor (1 in 10 of acetic acid).

Actions and uses.—The same as cantharis vesicatoria. As a vesicant, it is very powerful and acts without pain and without irritation of the urinary organs.

Other blistering flies exist in many parts of India. In Central India there has been found Lytta Violacea. In the Peninsula, Mylabrispustulata, Mylabris Indica, &c.

Annulosa—

Annelida-Hirudinea.—Common Earth-worm.

Sanguisuga Medicinalis.—Speckled leech. S. Officinalis.—Green leech. *Hirudo.*—Leeches, B. P.

Habitat.—Europe, South and East of Asia.

Parts used.—The live animal.

Vernacular.—Arab.—*Aluk, Khirahin;* Beng.—*Leeches;* Burm.—*Him-yau, Miyon Minyon;* Can.—*Jigani;* Cing.—*Kudalla, Pudal;* Duk.—*Jonk;* Guz.—*Jalo, Jaro;* Hind.—*Jonk;* Malay.—*Patchet, Lintah;* Maleal.—*Attah;* Pers.—*Zaloka, Zelu;* Sans.—*Jaluka;* Tam.—*Attei;* Tel.—*Jerika, Jalagah, Attalu.*

Leeches are of both aquatic and terrestrial habits. Small and middle-sized leeches are the best for medicinal use. They are found in

a clear shallow or deep pool of water containing water lilies and other sweet smelling plants. They are collected on a piece of calico containing some red clay ; they are generally kept in the roots of water lilies. The body is elongated 2 or 3 ins. long, tapering at each end, having a dish-like depression. It is marked with numerous stripes. It is smooth, soft, round, flattened, plano-convex, and wrinkled transversely. The back is of an olive green colour and marked with 6 rusty red longitudinal stripes dotted with black. Belly greenish-yellow, and spotted or marked with a black line. In the centre of the anterior disk is a small sucker surrounding the tri-radiate jaws with 2 rows of teeth. The posterior end is terminated by a large sucker. In the green leech the belly is olive green, but not spotted.

Action and uses.—Antiphlogistic, used for the local abstraction of blood. Depletion by leeches is analogous to the abstraction of blood by venesection, by lancing or by moist cupping. The quantity of blood drawn off by each Indian leech is about a drachm to a drachm and-a-half. Their antiphlogistic action is slow. They make a limited or gradual local impression. They are used in acute inflammation of the glands, as the mammæ, parotid, &c., inflammation of the serous membranes and in inflammation affecting the skin or bones. They should never be used in affections of the scrotum or eye-lids. In violent headache leeches are locally applied to the temples with benefit. When leeches are scarce and it is intended to abstract a large quantity of blood, the leeches may be punctured with a needle just near the tail, while still sucking or when nearly gorged with blood, when the blood is drained out of their body and they begin to suck again. By a repetition of this process a still larger quantity of blood may be drawn. To stop the bleeding continuing after the removal of the leeches, various hæmostatics are used, such as burnt cotton, desiccated alum, tannin, turmeric, burnt rags, cob-web, scraped lint, &c. In obstinate cases, solution of the perchloride of iron is used with benefit. Even a very fine point of caustic nitrate of silver is inserted into the wound, with benefit. Pressure by lint and bandage has also been tried with success.

Actinozoa.

Polypiferous Animals—Zoophyte—Plant-like Animals.—These are—Aquatic animals of the radiate kind, having a skeleton and fleshy portion.

Oculina Virginea—White corals.

Corallium Rubrum.—Syn. *Isis nobilis.* Red coral. The red colour is due to its containing iron.

Habitat.—Red Sea, Persian and Arabian Gulfs, Mediterranean, Sumatra, Atlantic Ocean.

Part used.—The calcareous shell or skeleton.

Vernacular.—Arab—*Bussud ;* Burm.—*Ky-a-ve-khet ;* Cing.—*Bubalo ;* Duk.—*Gulli ;* Guz.—*Paravalu, Parvâlâ ;* Hind.—*Parvara, Mungâ ;* Malay.—*Poalam, Karang ;* Pers.—*Marjân ;* Sans.—*Prabala, Birbat, Vidruma ;* Tam.—*Pavalam ;* Sing.—*Bubalo ;* Tel.—*Pagadam.*

Characters.—An individual animal has a parasol-shaped cover for the head ; arms furnished with 8 claws and extended as if in search of food. The skeleton is made up of numerous small insects which during life secrete a jelly-like cement mixed with carbonate of lime. The calcareous skeleton is branched like a shrub. It is thin, hard, cylindrical, slender and porous. The whole calcareous shell is of various shapes and sizes. Some look like a small-branched shrub, others like plants studded with flowers and leaves, others again like a tree in autumn with bare leafless branches, some like leaves spread out into fan-like flat broad surfaces. It is always found hanging like a pendant upside down. Examined carefully, each branch is found to be made up of animals, each having a tubelike aperture. Those insects are the zoophyte. This skeleton was at one time considered to be made up of marine plants covered with flowers instead of animals.

Characters.—Coral is made up of numerous minute pieces. Each piece is minutely and longitudinally furrowed. In smell it resembles frankincense. It easily breaks with a crackling sound.

Constituents.—Animal or organic matter 8 per cent., carbonate of lime 83 per cent., magnesium carbonate 3·5 per cent., and oxide of iron 4·5 per cent.

Preparation.—Parvala bhasm 'coral ash'.—Soak coral for some time in lime juice, put it in fire and calcine ; finally, reduce to a fine powder. Dose—5 to 20 grs.

Actions and uses.—Antacid, astringent and tonic. As a local astringent, it is used in the preparation of tooth powders. Its chief use by the native *hakims* is in cough and as a nervine tonic. As an antacid, it is given to check vomiting. It is also given in dyspepsia and bilious headache.

Another variety.—Vernacular.—Hind.—*Bekhi paravala;* Guz.—*Paravala-ni-jada.* The skeleton.

Like true coral, it is made up of small, hollow, rounded and slender articulated stems, with finer ramifications of homogenous threads of a similiar product. It is greenish or reddish when fresh; on exposure to the air it becomes nearly white. Its actions and uses are similar to those of *Paravala.*

Bone, Os.—The skeleton of vertebrate animals.

Vernacular.—Guz.—*Haddi;* Hind.—*Haddi;* Malay.—*Tulang;* Pers.—*Istakhan;* Sans.—*Asthi;* Tam.—*Yellumbugall;* Tel.—*Yemukâlu.*

Characters.—Solid, white, smooth on the surface, texture laminated porous internally, consists of cellular tissue, gelatinous matter interwoven with calcareous deposits chiefly of earth salts, as the calcium phosphate, calcium carbonate, magnesium phosphate, calcium fluoride, sodium chloride, and traces of silica, manganese, &c.

It is insoluble in water, soluble in hydrochloric acid with effervescence, leaving a gelatinous mass behind known as ossein. Ossein yields gelatin when boiled with water. On dry distillation it yields an animal oil known as Deppel's oil. This oil contains pyrodine, picoline, &c.

Used for preparing bone black (animal charcoal) and for manure.

Rhizopoda—spongida.

Spongia officinalis.—*Sponge.*

Part used.—The fibrous frame work.

Vernacular.—Arab.—*Isfanj, Isfanjah;* Burm.—*Tsak-tsa-ya;* Chin.—*Hai-jung;* Hind.—*Mua-badul;* Malay.—*Bunga-karang;* Pers.—*Abarmurdah;* Guz.—*Vadalun.*

It is an animal, living in water, composed of amœbiform bodies, having one or two breathing orifices. It is removed from its attachment by hands or forks, then buried in sand for several days, when the animal matter is disintegrated. It is next washed and squeezed. Some are yellowish-brown, others pale white, being bleached by sulphur dioxide, chlorine or sulphurous acid solution.

Constituents.—It contains spongin, sodium chloride, carbonate of lime, magnesia, silica, iron, also sulphur, phosphorus, iodine, bromine, potassium and ash 3 or 4 per cent. Used as sponge tents, pessaries, for absorbing liquids, cleaning, washing, dilating cavities, or for supporting prolapsed parts.

Burnt Sponge.—Spongia Usta.—When roasted the residue left is mostly charcoal, with calcium sulphate, silica, oxide of iron, calcium phosphate ; also magnesium carbonate, chloride of sodium, potassium iodide, some bromide, sodium iodide, &c.

Mollusca.—Mollusca proper.

Cephalopoda.—Order Dibranchiata.

Sepia Officinalis.—Cuttle-fish.

Habitat.—Mediterranean.

Parts used.—The calcareous substance under the skin of the back of the cuttle-fish. Os sepiæ.

Vernacular.—Chin.—*Hai-pian-sin ;* Eng.—*Cuttle-fish bone ;* Guz.—*Samudra phina ;* Hind.—*Darya ka kaf ;* Sans.—*Samudra phina ;* Tam.—*Kaddal noray ;* Tel.—*Sorupenka, Samudra punuragu.*

Samudra phina.—The name is derived from *samudra*, " sea," and *phina*, " foam." Natives suppose it to be the dried foam of sea water.

Characters.—The fish is often found floating on water. It is 5 to 10 inches long and 1 to 3 inches wide. The skeleton is an oblong, elliptical or oval flat calcareous substance of a whitish colour, very hard and brittle. The inner surface is hard, tubercled, porous and friable. The outer surface is smooth and hard, made up of thin flat pieces about the size of *hair* in thickness, arranged one over the other in a heap of layers, each layer being separated from the other by longitudinal ridges. It can be easily scratched with the nails, and is highly pulverisable.

Constituents.—Calcium carbonate 80 to 90 per cent. also phosphate and sulphate with silica.

Preparation.—*Samuder phin*, powdered, is used as a dusting powder or a paste. Dose—5 to 10 grs.

Medicated oil.—To prepare it, boil the fine scrapings in sessamum oil.

Actions and uses.—Antacid-like chalk ; also astringent and local sedative. The powder is dusted into the ear to relieve the pain of ear-ache or in otorrhœa. The paste is locally applied with limejuice in itches and other skin diseases ; also with rose water to the body in prickly heat. Powder is an ingredient in the preparation of tooth-powders. The medicated oil is dropped into the ear in otorrhœa.

Lamelli branchiata.

Ostrea Edulis and Ostrea Virginiana.—Oyster.

Habitat.—Atlantic and Indian Ocean coasts.

Part used.—Testa or oyster shell.

Vernacular.—Chin.—*Hau;* Eng.—*The common oyster shell, the bivalve shell;* French—*Nacre;* Portuguese—*Ostras;* Guz.—*Kalu;* Hind.—*Sipi, Kalu;* Malay.—*Teram.*

Characters.—It is a shell with a small, hollow, ovate excavation, in which the animal with a soft, fleshy, suborbicular body is enclosed. The shell has a sort of hinge at one end and opens into two valves. The one is shallow and the other deep. The deeper valve is found adhering to the rock. The shell is very hard grey or dark-brown externally and whitish within. Its external surface is rough and marked with numerous lateral indurated and undulated streaks. The inner surface is white, smooth and shining. Dose—5 to 20 grs.

Constituents.—It contains calcium carbonate 85 to 95 per cent., phosphate and sulphate of calcium and magnesium, oxide of iron, alumina and silica.

Used in the preparation of oyster shell ash (*Kalu bhasm*), the inner layer being chiefly used in preparing the ash.

Actions and uses.—The ashes are antacid and alterative, and used in cases of diarrhœa and chronic intestinal disorders. The animal is supposed to possess aphrodisiac properties, and is therefore eaten raw or cooked.

Mother-of-pearl is another species of mollusc, the shell of which is used for the same purposes as oyster shell.

Gasteropoda.—Univalve or monovalve shell.

Cypræa Moneta—

Part used.—The protective covering.

Vernacular.—Eng.—*Porcelaneous shells, Cowry, Cowrie;* Arab.—*Sadaf, Wuda;* Guz.—*Codi;* Hind.—*Cowri, Sipi;* Sans.—*Varatikā, Beya;* Beng.—*Beya;* Pers.—*Khar-mahra;* Cing.—*Pingo;* Tam.—*Kavadi;* Tel.—*Gavallu.*

Characters.—Small, convolute, enamelled white or yellow glossy shells. In size they vary from a tamarind seed to an almond. The colour is variegated ; shape oblong, ovate or oval. Upper surface is smooth, shining and convex. Base compressed with a cleft in the

centre, which runs longitudinally. The margin of the cleft is serrated on one side and depressed on the other. They are called porcelaneous from their brittleness, translucence and friability.

Constituents.—Fresh shells consist of a cellular gelatinous tissue filled with calcareous matter (earthy salts). They are insoluble in water, but soluble in hydrochloric acid with effervescence. They contain calcium phosphate, calcium carbonate, magnesium phosphate, calcium fluoride, manganese, and sodium chloride.

Preparations.—Cowrie bhasm—Shell ash. Dose—5 to 15 grs.

A compound pill, Shula gaja kesari.

Shula means twisting pain or colic, *gaja* an elephant, and *kesari* a lion (*Shihûn*), king of animals. It signifies pain or colic as strong as elephant, to remove which the aid of lion, the king of animals, is necessary.

℞ Monovalve shell purified 1, Para kajali 1, borax 1, rock salt 1, asafetida 1, carui seeds 1. Mix. Add the juice of chevica betel, and make a pill mass. Dose—3 to 5 grs.

Actions and uses.—Antacid, alterative and expectorant. The compound pill is given in dyspepsia, intestinal colic, enlarged spleen, asthma and cough. The ash is given internally in scalding urine and in gonorrhœa.

Conch—

Part used.—Shell.

Vernacular.—Eng.—*Conch shell;* Duk.—*Sukk;* Guz.—*Sankha;* Sans.—*Shankha, Shenkham;* Tam.—*Sankha sangu;* Tel.—*Senkham.*

Characters.—Porcelaneous shell of an oblong or conical form. The oblong variety is bulged in the middle and tapering at each end. The conical variety is peculiar. The upper portion is like a corkscrew, twisted and tapering at the end. The base is broad. The interior is hollow. The surface is hard, of a dull white colour. The upper surface is highly tubercled; the under surface shining, very brittle and translucent.

Preparations.—(1) *Sankha* (ash) *bhashma,* (2) a compound pill, *Sankhavati.*

Sankhavati contains *Sankha* (ash) *bhashma* 40, tamarind seed ash 20, the five salts *panchalavana* 4, asafetida, ammonium chloride, pepper, carui, carraway, ginger, long pepper, each 4 parts, purified

mercury 2, aconite 2. Mix. Triturate the whole in the juice of lemons, and make a pill mass. Dose—3 to 5 grs.

Actions and uses.—Antacid and alterative. The compound pill *sankhavati* is used in cases of dyspepsia and acid urine, as also in irritability of the intestines, as in diarrhœa, chronic dysentery, &c.

Reptilia.—Comprise Chenolia including Tortoise, &c.—Ophidia including snakes, &c.; Crocodilia—crocodiles, alligators, &c.; and Lacertilia—lizard.

Lacerta Agilis, Sand Lizard.

Habitat.—South and East of Asia.

Part used.—The skeleton.

Vernacular.—Bomb.—*Ghilodi;* Eng.—*Sand lizard;* Guz.—*Sarado, Kakida;* Pers.—*Rege mahi.*

Kakida means a sand fish with thorny spines.

Rege mahi, a sea fish with thorny spines.

The lizard has a head and four legs; when dry, the skeletons appear more like a fish without head and legs. It is of a light brown colour, about 6 inches in length, and with darkish-brown reticulations on its back.

Preparation.—Lizard ash or *Bhasm.* Dose—5 to 8 grs.

Actions and uses.—Used by the natives as a nervine tonic, stimulant and aphrodisiac, in general debility and seminal weakness.

Chenolia—Chelone Mydas and other Species.—Turtles.

Part used.—The oil.

Habitat.—Sea coast of Southern India and Gulf of Manar.

Vernacular.—Hind.—*Kachkra, Kachakru*; Malyal.—*Lisk, Kurakura, Sisikpaun, Kukilpaun*; Guz.—*Kachbo.*

Characters.—A pale yellow oily liquid of a fishy odour and somewhat disagreeable taste. Dose—1 to 2 fld. drs.

Actions and uses.—Alterative, nutrient and demulcent. Chiefly given in scrofula, rickets and pulmonary affections.

Meleagrina margaritifera—Avicula margaritifera.

Mytilus margaritiferus.

Parts used.—Pearl.

Habitat.—Persian Gulf, Ceylon, Panama, Red Sea, Arabian coasts.

Vernacular.—Arab.—*Looloo, Lulu ;* Chin.—*Yang-chu ;* Eng.—*The Pearl Oyster ;* Guz.—*Moti, Mutti ;* Hind.—*Moti ;* Mar.—*Moti ;* Malayal.—*Motya, Mutiyaralulu ;* Pers.—*Marwarid ;* Sans.—*Maracata ;* Shingh.—*Mutti, Mootoo ;* Tam.—*Muttu ;* Tel.—*Mutiamu.*

The pearl is found in general molluscs inhabiting shallow seas and sand banks. It is nearly a semi-circular shell, greenish without, and ornamented with the most beautiful nacre within. The nacre is employed for trade purposes. Fine pearls are produced from the extravasation of nacre.

Preparation.—Shell powder. Dose—¼ to ½ gr.

Actions and uses.—Stimulant, tonic and aphrodisiac. It is one of the ingredients in numerous Indian prescriptions used for impotence, heart-disease, consumption, &c.

Bombyx Mori, Bombyx Mylitta.

Parts used.—The skeleton (cocoon).

Habitat.—Siam, India, Persia and China.

Vernacular.—Arab.—*Abrasham ;* Beng.—*Pat ;* Duk.—*Reshm-ki keeri ;* Eng.—*Domesticated silk-worm-moth ;* Guz.—*Resham-na-potan ;* Tam.—*Putloo puchie ;* Tel.—*Puttoo purughu, Narputtio.*

Bombyx Mori are the worms which feed on the leaves of morus ("shetura"). Those which feed on the leaves of *Rhamnus jujuba* are known as Bombyx Mylitta.

Characters.—The cocoons or sacs are coverings spun or woven by a group of silk moths during their metamorphosis. Each moth is about an inch in length, ½ inch in thickness, and of an oval shape. The sac is covered externally with a yellowish fibrous silk, which has only a small opening at the top. Internally the sac is light brown and smooth, and contains dark-brown dried remains of a caterpillar.

Preparation.—Cocoon-ash. Dose—3 to 10 grs.

Actions and uses.—Styptic and tonic. As an astringent the ash is used to check profuse menstruation, leucorrhœa and chronic diarrhœa. It is generally given in combination with other astringents

THE INORGANIC GROUP OF DRUGS.

These are derived from the mineral kingdom, and consist of various elements and their compounds. They are otherwise known as *Metalloids* and *Metals.*

Metalloids.

Oxygen.—Oxygen-acid producer. It is an element universally diffused in nature and used in medicine. In combination with hydrogen it forms water or hydrogen dioxide. With metals, as antimony, barium, iron, lead, manganese, mercury, silver, zinc, &c., it forms metallic oxides. With ethyl it forms ethyl oxide or absolute ether. It enters into the composition of most of the acids, acid salts, many of the organic bases, and of several alkaloids.

Manufacture.—Obtained by heating potassium chlorate or manganese dioxide, or both together, or obtained from the atmospheric air by first dehydrating and decarbonizing it with quicklime. The oxygen is then absorbed by caustic baryta forming barium peroxide. It yields pure oxygen when heated at a lower temperature.

Characters.—A colourless gas, largely found in the atmospheric air, in water, in the tissues of plants and animals, and in great part of the earth. It is without any odour or taste ; can be liquefied by extreme cold and pressure.

Preparations.—Ethyl-Oxide—Etherial oxygen, a mixture of oxygen, with ether vapour.

Manufacture.—Produced by adding permanganate of potassium 8 grs. dissolved in one ounce of water to ozonic ether 2 ozs. in an inhaler. As the liquids mix, oxygen and ether are given off and inhaled.

Ozone.—A peculiar modification of oxygen in a condensed form.

Manufacture.—To prepare it, pass electric sparks through the air or dissolve in water a mixture of manganese dioxide, potassium permanganate and oxalic acid.

Characters.—Found in the air (1 in 10,000), more abundant in the open country than in the cities. Has peculiar odour.

Glycozone.—See Glycozone.

Sanitas.—See Sanitas.

Physiological action.—Oxygen is a Cardiac and respiratory stimulant. It is essential to life. Nutrition, tissue changes, blood formation, all

require oxygen. Respiration cannot be performed without it. In ordinary doses, if inhaled as a gas or drunk as aerated water for a long time, it gives rise to a sense of heat in the mouth, along the larynx, trachea and bronchi. It stimulates the mind, and increases digestion, raises the heart beat and temperature, and produces increased bodily activity. It is used to resuscitate individuals asphyxiated by strangulation or drowning even after the artificial respiration has failed. It is an efficient application to atonic, scrofulous and syphilitic ulcers, and to gangrenous sores. In alopecia areata, its application to the scalp by means of a rubber cap is of benefit. It is very useful in respiratory diseases as asthma and whooping cough and in cardiac dyspnœa and in uræmic coma, in diabetes, in nervous diseases as tetanus, hydrophobia, goitre, epilepsy, eclampsia and in anæmia from loss of blood or in protracted suppuration. Water ærated with oxygen is drunk in diabetes and in dyspepsia. Inhalation of oxygen in pneumonia is of great service. It relieves dyspnœa. Ozone is antiseptic and disinfectant; a powerful oxidyzing agent. It reduces the frequency of the respiration and pulse. It destroys low organisms, and decomposes blood. In small doses diluted with air it acts as a soporific. In large doses it acts as a powerful irritant of the respiratory mucous membrane leading to acute catarrh. Like oxygen it is used for inhalation.

Inhalation of ozone or ethereal oxygen is given in whooping cough, asthma, phthisis, chlorosis, &c., also as an antidote for poisoning by chloroform, ether, chloral and toxic gases; and in poisoning by opium and its alkaloids and by hydrocyanic acid.

Hydrogen.—

The lightest metalloid known. Not used in medicine. Useful as an element forming hydrides.

Liquor Hydrogenii Peroxidi, B. P.—Solution of Hydrogen Peroxide. Oxygenated water.

Manufacture.—Treat Barium Peroxide with dilute sulphuric acid, when, as a product of decomposition, Barium sulphate and Peroxide of Hydrogen are formed. On filtering, a clear solution is obtained.

It is also produced by naturally submitting to rapid oxidation various essential oils, as oil of turpentine, eucalyptus, &c. It is an active ingredient of the disinfectant known as sanitas.

Characters.—A colourless slightly acid liquid without any odour, but with slightly harsh bitter taste. It causes a soapy, frothy sensation in the mouth. It contains ten volumes of oxygen and about 3 per cent. of the pure dioxide. It effervesces and readily decomposes by heat, agitation and exposure, and is converted into water and oxygen. It decomposes when in contact with oxide of silver or with oxide of manganese, and oxygen is liberated. Ether prevents this decomposition, and hence it is used in the production of ozonic ether. Dose—½ to 2 drs. diluted with water.

Preparations.—Bactericides.—These are a series of liquid antiseptics, composed of hydrogen peroxide 5 volumes as a basis with mercuric bichloride 5 p.c. carbolic acid, sulphophenic acid, &c. These are used as solution, injection or paint.

Ozonic Ether.—A solution of peroxide of hydrogen 30 volumes strength in ether. It is miscible with water. Dose—½ to 1 fld. dr.

Preparations.—Antiseptic ointment—ozonized ointment. Contains ozonic ether 4 drs., benzoic acid 20 grs., otto of roses 4 ms., and lard ozs. 4. Mix to make ointment.

Ozonic Toilet Vinegar.—A combination of ozonic ether with vinegar.

Sodii Peroxidum.—A white amorphous powder; very deliquescent. Water, added to it, produces heat and oxygen.

Pyrozone.—Solutions of peroxide of hydrogen in water and ether of various strengths.

An efficient oxidiser. Used internally or as an antiseptic according to the strengths of solution. The strong solution is a caustic.

Physiological action.—The solution of hydrogen peroxide is a powerful disinfectant, bleaching agent, antiseptic and an oxidizer. It destroys pus by stimulating healthy granulations. As a germicide, it destroys germs of infectious and other diseases, and acts on organized ferments. It coagulates albumen, forming a thin crust on a suppurating surface. Taken internally, it gives oxygen to the blood, and supports digestion. *Therapeutics.*—It is used as a spray to the throat in whooping cough, chronic-bronchitis and phthisis. As a disinfectant its paint or pigment is used in membranous diphtheria, croup, and sore throat; also to venereal wounds and ulcers. As a douche or injection it is given in affections

of the mouth, catarrh of the nose and laryngitis, pharyngitis and in ulcerated tonsils ; also in gonorrhœa and leucorrhœa. In suppurating buboes it is injected into the gland. In gastric fermentation and in sarcinæ it is given internally with benefit. The solution is sometimes used as a wash for the stomach. It is used to disinfect drinking water. As a stimulant it is given in diabetes, whooping cough, typhoid fever, and in strumous diseases ; also in albuminuria during pregnancy and in pneumonia.

Ozonic ether is an antiseptic and stimulant. It is given in diabetes to oxidise the sugar. As an antiseptic wash it is used in otorrhœa and other purulent discharges. The ozonic ointment is rubbed over the body in scarlatina. The ozonic toilet vinegar is applied by surgeons and accoucheurs to the hands before making *post-mortem* examinations. It is also a powerful bleaching agent.

Aqua.—*Hydrogen Monoxide-water.*

Vernacular.—Arab.—*Mâa ;* Beng.—*Jal, Pâni ;* Burm.—*Yâ ;* Chin. —*Yuh-yih, Shwui, Lîu-shui ;* Can.—*Niru ;* Cing.—*Vaturu ;* Eng.—*Water ;* Guz.—*Pâni ;* Hind.—*Pani ;* Mar.—*Pâni ;* Malay.—*Ayar, Ayar-tawar, Vellam ;* Pers.—*Ab ;* Sans.—*Jalam ;* Tam.—*Tanni, Jalam nir ;* Tel.—*Nillu, Neru.*

Natural water. Ordinary water—A fluid free from visible impurities. It is without any colour, odour or taste. Has a neutral reaction.

Drinking water.—Ordinary water should be first boiled and then used for drinking purposes.

Distilled water, Aqua Distillata, B. P.—It scarcely leaves any visible residue. It is a chemically pure water.

Medicinal waters.—Waters impregnated with one or more substances having medicinal properties. These substances may be solids, liquids or gases. They are prepared in various ways. (1) A whole plant or some particular part or different parts of it are boiled in water and distilled over. (2) Volatile oils added to water and distilled over. In some cases the oils are triturated with calcium phosphate and then with water and filtered. (3) Alkaloids and metallic salts are dissolved in cold or hot water.

Salutaris.—An aërated water. To prepare it water is first distilled. A perfect solvent for absorbing and removing waste or poisonous products in the body, very beneficial in kidney diseases, gout and congested liver. In dyspepsia in children it is of great benefit.

Jaham Pani.—A household preparation among the natives of India.

Jham or Jhûm refers to the peculiar hissing sound produced when a red-hot substance is plunged into water. To prepare it, plunge into pure water a piece of iron or brick or tile first made red-hot. This water is extensively used for appeasing thirst in fevers and for relieving flatulence.

Physiological action.—Diluent, refrigerant, diaphoretic, solvent and diuretic. It is found in all the tissues of the body. In moderate quantities when taken into the stomach, cold water assists digestion. In large quantities it dilutes the gastric juice, suspends the action of pepsin, and depresses the nerve function, and hence lowers digestion. It stimulates the excretion of urine, sweat, &c., and thus the products of tissue change, such as urea, phosphoric acid, &c., are eliminated. Cold or iced water locally applied abstracts body heat, lowers the surface temperature, increases circulation, the tone of the heart and the muscular system, but changes quiet breathing to a sort of spasmodic action. In some cases these salutary effects are replaced by a chill and great depression.

Warm water increases at first the body heat, the circulation and respiration. This is soon followed by rapid tissue change and increased elimination of the waste products by the skin and lungs. If continued for a long time, it leads to a depression of spirits, giddiness, and general muscular debility.

Hot water locally applied, accelerates circulation, dilates the vessels at first, but soon after contracts them ; hence a good application for relieving local congestions or inflammations. In the relief of spasms it is a very reliable remedy. Hot vapour bath is a stimulant to the circulation, and produces profuse perspiration.

Therapeutics.—Ordinary cold water taken before going to bed relieves habitual constipation; as a wet pack it is used locally in tonsilitis, diphtheria, croup, &c.; Cold baths are good in fevers. Iced cold application to the head is a valuable remedy in headaches, and in cerebral congestion, to the spine in cholera, chorea, &c., to the uterus in *post-partum* hœmorrhage. Also locally applied to hernia, orchitis, buboes, piles, &c.

Hot water is used externally as baths, fomentations, packs, &c. Useful in relieving local congestion and inflammation. As a hot fomentation to the kidneys it is used to relieve suppression of urine, to the spine in diseases of the spinal cord and of the meninges, and also in backache. In disorders of the uterus and ovaries, hot vaginal douche

is very serviceable. Long continued application of hot water on sores and wounds acts like a soothing dressing.

Hot or vapour baths or Turkish baths are useful in relieving rheumatism, syphilis and advanced cases of Bright's disease. Alternate use of warm water to the body and cold to the head is beneficial in the treatment of infantile convulsions, chorea, &c.

Internally a drink of hot water acts as a diaphoretic.

MINERAL WATERS.—These are natural waters, mostly spring waters containing various salts in solution, sufficient in quantity to impart a sensible taste, according to their characters and effects. They are divided into certain groups.

FERRUGINOUS WATERS OR CHALYBEATE WATERS.—In India, springs containing this water are met with in Nilgheries, Seeta Khond, &c. Some springs are thermal and contain iron as carbonate, sulphate or chloride.

Actions and uses.—Hæmatinics, given in anæmia, amenorrhœa and other allied conditions.

SULPHURETTED WATERS.—Hepatic waters—In India this water is found in certain thermal springs situated in Konkan, Gujerat, Sind, Salt ranges at the base of the Himalaya, &c. These contain sodium sulphide and sulphuretted hydrogen gas. Used for drinking purposes and as baths.

Actions and uses.—They are alterative and stimulant. Used in eczema, psoriasis and other skin diseases; also in rheumatism, sluggish liver and uterine complaints.

ALKALINE MINERAL WATERS.—These are generally cold, some are warm. They contain large quantities of salts of sodium, lithium, calcium and magnesium.

Actions and uses.—Alterative, diuretic and solvents given in uric acid diathesis, gout, and vesical catarrh; also in dyspepsia and sluggish liver.

CARBONATED WATERS OR ACIDULOUS WATERS.—These are sparkling waters containing a large amount of carbonic acid gas which gives them their acidity. They hold in solution carbonates of sodium, calcium and magnesium.

They are used as stomachic tonic and alterative, and are given in gout, rheumatism, calculous affections, &c.

SALINE MINERAL WATERS OR BITTER WATERS.—In India they are found in Sind, Punjab, &c. They contain saline purgatives, such as sodium sulphate, sodium chloride, magnesium sulphate, calcium carbonate, and potassium sulphate, &c.

Friedrichshall water. A saline mineral water, contains in addition silica and bromides, &c.

Mineral waters are aperient and of high medicinal value. They are gentle, safe and speedy in their action ; given in deranged digestion, habitual or temporary constipation, affections of the stomach and liver, and in the inflammation and congestion of the brain, lungs, &c.; also given in bilious attacks, chronic diseases of the respiratory organs, hæmorrhoids, cutaneous affections as pustules in the face, rheumatic and gouty disorders, fatty degeneration and general obesity ; in uric acid concretions and subsequent formation of gravel and calculus in the kidneys and bladder and in scrofulous and glandular enlargements. It is also given to remove the ill-effects of excess in diet, &c.

INDIFFERENT THERMAL WATERS.—These hot springs are found in the richest districts of Tenasserim, a district round Hazaribagh, Jalandhur, Doâb, &c. They contain very small quantity of salts having no therapeutic value and a large amount of nitrogen gas. Their chief value, however, depends upon their high temperature ; they are used as baths for their sedative influence in various nervous affections as hysteria, paralyses, also in gout, rheumatism and in uterine disorders. Internally the water is drunk in chronic dyspepsia and in uric acid diathesis.

IODINE WATERS.—These contain iodine, bromine and arsenic. As an alterative, given in scrofula, gout, rheumatism, goitre, &c.

Sal Carolinum Factitium.—Artificial Carlsbad salt, similar in composition to salts contained in Carlsbad water.

It contains sodium sulphate 44, potassium sulphate 2, sodium chloride 18, sodium bicarbonate 36, and traces of lime, aluminium phosphate, ferric carbonate and ferric silicate. 53 grains of the salt to a pint of water is equal to a pint of Carlsbad water. Dose—20 to 60 grs.

Physiological action—Antineuralgic and sedative. It increases the secretions of the stomach, intestines, kidneys and lungs. As a sedative it alleviates pain.

Therapeutics—It is given to relieve the pain and cramps of the stomach, as in cardialgia, colic, and gallstone. In cases of gout, uric acid calculi and in those due to insufficient elimination of effete matters it is of great benefit. In enlargement of the liver and spleen, in cases of jaundice and catarrh of the biliary passages, it is equally useful.

The medicinal value of mineral waters is greatly exaggerated both by the laity and the interested proprietors. Different localities containing such springs become health-resorts and depôts for invalids and idlers who resort to them from every part of the globe.

It is not difficult to understand to what really the benefit is due. The good results of the treatment are not solely due to mineral waters, but to change of climate and scenery and to rest and freedom from worry of home and business cares. When at a place of resort, these health-seekers have perforce to pay scrupulous attention to diet and take it at regular hours. They have regular hours for drinking spring waters and open-air exercise to and from the springs. They also sleep without dissipation. They avoid alcohol and excitement of all kinds, and thus they are enabled in a great measure to secure the desired benefit. They, however, believe that this benefit can only be derived by going to the watering places which are located sometimes several hundreds of miles away from their own residences and they also pay dearly for it because they believe that they obtain their money's worth. There is no doubt however that the benefit is in a great measure due to their paying scrupulous attention to diet and hygiene, to the regularity of life and to the drinking of mineral waters in prescribed quantities, and avoidance of any wine, spirits, &c Of late it has been considered necessary to wash out the stomach from day to day in cases of gastric hyperacidity and atonic dyspepsia and to examine its contents three or four hours after each meal.

Baths.—

Vernacular.—Hind.—*Ghussal, Sar nahan, Ungul, Ha-mâm lenâ, Ungul sthnanam ;* Tel.—*Abhi angana.*

Water in different forms or as medicated baths is extensively used therapeutically.

VAPOUR BATH or steam bath is used in febrile affections, gout and rheumatism and in diseases where diaphoresis is required. It stimulates the circulation. Sometimes various drugs are added to the water to enhance the diaphoretic effects, such as nagoda leaves (*Vitex negundo*), cammomile flowers, &c.

HOT BATH.—For this purpose water as hot as can be borne is used. At first it acts as a stimulant to the general circulation, but in a short time it produces sedative or depressing effects, attended with profuse sweat. Alternate use of hot and cold bath is used in infantile convulsions.

LOCAL HOT BATHS.—These are hip baths and foot baths, sometimes with mustard added to them, and are used in fevers, in amenorrhœa and in uterine and vesical affections, in renal calculus, and in renal and biliary colic.

MEDICATED HOT BATHS, containing sulphur, alkaline salts, &c., are also used in skin diseases as itch, lichen, prurigo, urticaria, &c.

TEPID OR LUKEWARM BATH is used in fevers, more with a view to abstract heat from the body than for any stimulating effects. It is preferred by some to cold bath, as there is no shock which is felt by the patient the moment he comes in contact with cold water. It soothes the irritated cutaneous nerves, produces gentle perspiration, and removes body heat.

COLD BATH.—The temperature varies from that of the ordinary air to that of ice-cold water. It is largely used as an antipyretic in typhoid and other febrile affections. Under its use the pulse improves and the patient revives. It is, however, not so beneficial in the weak and the debilitated.

LOCAL COLD BATH.—A very useful application to reduce heat. It is applied in the form of ice or as cold lotion to the head in headache, and to the limbs in fevers ; also used to relieve local pain and to lessen external as well as internal inflammation as in meningitis, cerebrites, metritis, parametritis, epididymitis and other glandular inflammatory affections ; sometimes ice is used as a local anæsthetic in opening abscesses and for other minor operations. For its power of constricting blood vessels it is almost universally used as an application for strangulated hernia and for arresting all internal and external hæmorrhages.

DOUCHE.—It may be hot or cold. The water used may be salt water or fresh water. The water falls on the part with a force through several holes in a basin hung up above the head. In the case of a douche for the body, a cage or skeleton pipe with several openings is made, so as to encircle the body, and it communicates with the water-basin. For a vaginal or uterine douche medicated antiseptic water is introduced into the organs through a pipe connected with a basin placed at some height.

TURKISH BATHS.—They are used in certain diseases as rheumatism, gout, lumbago, sciatica, in urinary disorders as renal or vesical calculus; also in dyspepsia, due to high feeding and sedentary habits. It is a combination of cold and hot vapour baths, each taken in regular order. The individual is first passed through a series of rooms in which vapour of water is let off in regularly increased quantities and temperature and where he is shampooed and scrubbed. He is next passed through another series of rooms where he gets a shower of hot water, beginning from very hot to tepid water. After this he gets a series of cold baths, beginning with water at ordinary temperature to ice-cold water. Persons with tendency to lung affections, such as influenza, coughs and cold, should avoid Turkish baths.

Nitrogen.—Generator of Nitre. Also called azote—a destructive of life. A colourless gas, without any odour or taste, met with extensively in nature—about 77 per cent. in the air we breathe. In combination with most of the oxides of metalloids and metals it forms nitrites and nitrates; with carbon it forms cyonegen. With hydrogen it forms ammonia and with oxygen nitric acid. Enters largely into the composition of all alkaloids. Rarely used in its free state as a medicine. It is an important element found in very large quantity in a majority of animal bodies and vegetable substances used as articles of diet.

Nitrogen Dioxide.—Sometimes called Nitric oxide. Very unpleasant fumes emanating from batteries containing nitric acid.

Actions and uses.—Anticholeraic. Men working in electrotype establishments are believed to remain free from the ravages of cholera.

Acidum Nitricum, Nitric Acid, B. P.—Aqua fortis.

Vernacular.—Eng.—*Nitric acid*; Arab.—*Maulabker*; Beng.—*Shorâr-tejab*; Burm.—*Yan sain-yebiyan*; Duko—*Shera-ka-tesab*; Guz.—*Surakhar-no-tesab*; Hind.—*Shore-kâ-tejab*; Malyal.—*Vetti uppa dravakam*; Pers.—*arke-shorah*; Singh.—*Vedi-oinu-rasa*; Tam.—*Potluppu dravakam*; Tel.—*Patluppu dravakam, Sûrakara.*

Manufacture.—To potassium nitrate or sodium nitrate add sulphuric acid and apply heat when nitric acid and Bisulphate of potasium or sodium are formed; Nitric acid being volatile distils over. It contains 70 per cent. by weight of hydrogen nitrate and 30 per cent. of water.

Characters.—A clear, colourless, *suffocating, volatile liquid, emitting corrosive fumes* of strongly acid odour and intensely acid taste; very

caustic and corrosive, yields no residue on evaporation to dryness Sp. gr. 1-42.

Acidum Nitricum Fumans.—A reddish brown liquid, giving off red fumes on exposure. Contains 91 per cent. by weight of hydrogen nitrate. Used as a caustic.

Acidum Nitricum Dilutum.—Diluted nitric acid, B. P.

Characters.—A watery liquid, without any odour and of an acid taste and acid reaction. 1 sp. gr. 1·101. It contains 17·44 per cent. by weight of hydrogen nitrate. Dose—5 to 20 ms.

Acidum Nitro Hydrochloricum—Aqua Regia.—Nitro hydrochloric acid. Nitro muriatic acid. Contains nitric acid 18 parts and hydrochloric acid 82 parts by volume.

Characters.—A golden-yellowish, fuming, corrosive liquid. It is wholly volatilized by heat. It dissolves gold leaf. A drop of it added to a solution of potassium iodide sets free iodine in abundance. Dose—1 to 3ms., well diluted.

Acidum Nitro Hydrochloricum Dilutum, B. P.—Diluted nitro hydrochloric acid. It is an aqueous solution of free chlorine and hydrochloric, nitric and nitrous acids.

Contains nitric acid 3 ozs., hydrochloric acid 4 ozs., distilled water 25 ozs.

A colourless fluid, with a pungent acid odour and taste. Sp. gr. 1·07. Dose—5 to 20 ms.

Used as lotion, wash, injection and as a bath containing 6 fluid ounces of the dilute acid to one gallon of water.

Actions and uses.—Strong nitric acid is only used externally. It is a powerful escharotic and caustic. Its action being effectual, but superficial. It coagulates the tissues. It is applied to destroy phagedænic sores, foul ulcers, fistula, chancres, cancrum-oris, hæmorrhoids, warts, &c. It is applied to the cavity of the uterus in chronic endometritis. In bites of snakes and rabid dogs it is applied to the wound to destroy the poison. Its application to the skin produces yellow stain of picric acid. Its vapour is suffocating and if inhaled, it causes œdema of the glottis and intense bronchital irritation. As an antiseptic lotion it is used well diluted in chronic ulcerations, as a wash in obstinate skin diseases, and as an injection in leucorrhœa.

Internally, the strong acid is a powerful corrosive. In the diluted form, as a tonic, it is used in atonic dyspepsia and general debility; as an alterative in cases where mercury cannot be tolerated, as in scrofula, mercurial cachexia and syphilis; also in torpid liver, bilious affections and jaundice. In intermittent and remittent fevers it can be given as a refrigerant drink to allay thirst. As a solvent it is very useful in dissolving phosphatic deposits in the urine, also in oxaluria, lithæmia and in chronic cystitis. As an astringent it is occasionally used in bronchorrhœa, diarrhœa, dysentery and leucorrhœa, and in aphonia in singers.

Diluted nitro hydrochloric acid is a tonic and stomachic and is given in acidity of the stomach, general debility, frontal headache; also in dissolving phosphatic and other deposits. Its chief use, however, is in chronic hepatic affections due to malaria, hepatic dysentery, jaundice, biliousness, dropsy, &c.; its lotion is used externally as a compress on the hepatic region in liver affections, as well as an acid bath in syphilitic and other skin diseases.

AMMONIUM AND ITS COMPOUNDS.

Ammonium.—Ammonia. It is a hypothetical compound radicle analogous to potassium, sodium, &c. It does not exist in the native state, but as an aqueous solution or as ammonia gas. The gas is evolved during the putrefaction of all organisms, from liquor ammoniæ, from ammonium carbonate and from many organic nitrogenous compounds. It is met with in a free state in the air or in the soil, and diffused extensively throughout both the kingdoms of nature.

Characters.—A colourless gas of a very pungent odour and acrid taste and alkaline reaction; combines with various acids, and forms salts analogous to alkaline salts of sodium, potassium, &c.

Liquor Ammoniæ Fortis, B. P.—Strong solution of ammonia. Ammoniacal gas dissolved in water containing 32·5 per cent. by weight of the gas or more than three times the strength of liquor ammoniæ, sp. gr. 0·891.

Liquor Ammoniæ.—Solution of ammonia, B. P. Spirit of hartshorn. Contains 10 per cent. by weight of ammonia, sp. gr. 0·959.

Manufacture.—To obtain Liquor Ammoniæ Fortis, heat together ammonium chloride 3 and slaked lime 4 and pass the gas thus produced into water.

Characters.—A colourless, strong, alkaline liquid, of an acrid taste, giving off strong, pungent, highly irritating fumes when exposed to the air. Has an alkaline reaction. Freely soluble in water. One fluid drachm contains 15·83 grains of ammonia. Dose—3 to 6 ms.

Preparations.—*Tinctura ammoniæ composita*, Eau de Luce.

Macerate mastiche 2 drs., rectified spirit 9 drs., oil of lavender 14 ms., and add strong solution of ammonia 20 ozs.

Applied to the bites of insects.

Tinctura Guaiaci Ammoniata, B. P.—To prepare it, mix together guaiacum resin 200, oil of nutmeg 3·1, oil of lemon 2·1, strong solution of ammonia 75, alcohol to make 1,000. Dose—½ to 1 dr.

Tinctura Valerianæ Ammoniata, B. P.—Macerate powdered valerian rhizome 200, oil of nutmeg 3·1, oil of lemon 2·1, solution of ammonia 100, alcohol 900. Dose—½ to 1 dr.

Linimentum Ammoniæ, Liniment of Ammonia, **B. P.** (1 in 4).—Contains liquor ammoniæ 25, almond oil 25 and alcohol 50.

Linimentum Opii Ammoniatum.—Soap liniment, compound comphor liniment, Tincture of opium of each 6, Belladonna liniment, strong solution of ammonia of each 1. Mix and filter ; similar to Bow's liniment.

Spiritus Ammoniæ Aromaticus—Spiritus Ammoniæ compositus. Aromatic spirit of ammonia. Spirit of sal volatile, B. P.

Manufacture.—Mix strong solution of ammonia 8 fld. ozs., ammonium carbonate 4 ozs., oil of nutmeg 4½ fld. drs., oil of lemon 6½ fld. drs., rectified spirit 6 pints, add water 3 pints, and distil.

Characters.—A transparent, colourless liquid, of a pungent ammoniacal odour. Dose—30 to 90 ms.

Spiritus Ammoniæ Fetidus, Fetid spirit of ammonia, B. P.—(1) of liquor ammoniæ fortisin 10. Prepared by taking asafetida 1½ ozs., liquor ammoniæ fortis 2 fld. ozs., rectified spirit to make a pint. Dose—20 to 40 ms., or 60 to 90 ms. for a single dose.

Aqua Sedativa. Eau Sedative de Raspail—Contains ammonia water 6, sodii chloridum 6, spiritus camphor 1, aqua 100. For local use.

Physiological action.—Ammonia gas is a diffusible stimulant, highly alkaline, and an irritant to the mucous membranes. Locally caustic

and vesicant. If inhaled, it causes irritation of the glottis and cough and often suffocation with inflammation of the respiratory passages. It is a rubefacient when applied to the skin, and allowed to evaporate, but if covered with an oiled silk, it causes vesication. If taken into the stomach, it acts as an irritant poison, setting up gastro enterites, coma and death. Absorbed into the blood, it acts directly, and keeps the fibrin in solution. In a milder form as solution of ammonia it is a stimulant of the spinal cord, respiration and circulation. On the liver it acts as a stimulant, increasing the glycogenic function. It does not render the urine alkaline, but is converted finally into urea. If given in large doses and for a long time, it paralyzes the cord, motor nerves and muscles. It is too strong for internal use unless largely diluted. *Therapeutics*—Ammonia water is used as inhalation or given internally in fainting, syncope, or cold to the head. As a powerful stimulant it is used in poisoning by narcotics as opium, cannabis, dhatura, digitalis, tobacco, prussic acid, &c. It dissolves the blood clots, and keeps up alkalinity of the blood, thereby preventing embolus of the heart and also thrombosis. Ammonia is given in advanced stages of fever and in inflammatory diseases where the vital powers are depressed. In the bites of snakes and insects it is given internally and also applied externally. In syncope the vapour is very beneficial. Spiritus ammonæ fetidus is a valuable stimulant and anti-spasmodic, and given in hysteria, epilepsy, &c.

Liquor Ammonii Acetatis Fortior.—Strong solution of ammonium acetate.

Manufacture.—Neutralize ammonium carbonate 15½ ozs. with acetic acid 50 fld ozs., or a sufficiency in distilled water to make three pints.

Characters.—A colourless solution, without any odour and of a saline taste. Dose—25 to 75 ms.

Liquor Ammonii Acetatis, Solution of Ammonium Acetate, B. P.—Spirit of mindererus—1 of the above to 5 of water. Dose—2 to 6 fld. drs.

Actions and uses.—Diaphoretic, diuretic, refrigerant and emmenagogue. Used especially in exanthemata, influenza, coryza, acidity of the stomach, &c.; in fevers, dropsy and in dysmenorrhœa (in large doses); also in erysipelas and delirium tremens.

Ammonii Benzoas,—*Ammonium benzoate,* B. P.

Manufacture.—Neutralize benzoic acid with solution of ammonia in distilled water, evaporate and crystallize.

Characters.—Thin white four-sided lamellar crystals, of faint benzoic odour and acrid bitter saline taste. Readily soluble in cold water (1 in 6), in alcohol (1 in 30), and in glycerine (1 in 8). Yields no residue on heating to redness. On boiling, benzoic acid and ammonia are separated. Dose—5 to 15 grs.

Actions and uses.—Alterative, solvent, stimulant, and diuretic. It acts chiefly of the mucous membranes of the genito-urinary passages and especially that of the bladder. Like benzoic acid, it is excreted in the urine as hippuric acid. It has a solvent action on phosphatic deposits. It stimulates the liver. *Therapeutics*—It is given in chronic cystitis with scanty fetid urine, in uric acid gravel and in phosphatic deposits in the urine; also in dropsy and gouty affections and in cases of enlarged prostate. As a hepatic stimulant it is given in torpid liver; it is inferior to benzoate of sodium. It is eliminated in the urine as hippuric acid, hence of great benefit in cases of alkaline urine. Given in 15-gr. doses in scarlet fever.

Ammonii Bromidum—*Ammonium bromide*, B. P.

Manufacture.—Mix together hydrobromic acid and solution of ammonia, evaporate and crystallize.

Characters.—White crystalline powder or colourless prisms without any odour and of a pungent saline taste, soluble in water (1 in 1·5) and in alcohol (1 in 30). Dose—5 to 30 grs. Used as lozenges (2 grs. each) for whooping cough.

Actions and uses.—Hypnotic, nervine sedative and alterative; similar in action to bromide of potassium, but less depressent. Given in nervous affections as neurosis, dilirium tremens, whooping cough and glandular enlargements. In diabetes of nervous origin and in acute rheumatism it is a good remedy. In epilepsy it is given as mixed bromides of ammonium, sodium and strontium.

Ammonii Carbonas—Ammonium, carbonate, B. P.—*Ammonium sesqui carbonate.*

Heat together ammonium sulphate or ammonium chloride with chalk, and condense the vapour. It is a mixture of ammonium hydrogen carbonate with ammonium carbamate. Dissolved in water, the latter is converted into neutral carbonate of ammonium.

Characters.—White, hard, translucent crystalline masses of strong ammoniacal odour and sharp saline taste; strongly alkaline, soluble

in water (1 in 4), slightly soluble in spirit. On exposure to the air, it is converted into acid carbonate and forms a white efflorescence which should be removed or scraped off before the salt is used. Dose—3 to 10 grs.

Physiological action.—Stimulant, diaphoretic, expectorant. In moderate doses, it is a stimulant of the gastric and respiratory centres. Taken into the stomach it is generally decomposed by the hydrochloric acid of the gastric juice, and ammonia gas is set free and absorbed. In large doses, it is emetic. In overdoses it is poisonous. Externally it is an irritant and rubefacient.

Therapeutic uses.—A very valuable diffusible stimulant, especially indicated in weak and irregular heart and in syncope, fainting, cardialgia and gastrodynia and low state of the system. It is largely used in pneumonia, puerperal, typhoid, scarlet and other adynamic eruptive and continued fevers. Its property of dissolving fibrin renders it useful in thrombi and emboli of the heart, in hæmorrhages in the brain and other parts. As an antispasmodic it is given in flatulence, tympanitis, hysteria, epilepsy, &c. As a stimulant it acts on the secreting and excreting organs, increasing the quantity of the secretions, and rendering them more healthy. It stimulates all mobidly affected mucous membranes, especially those of the respiratory tract; generally given with senega in chronic broncho pneumonia, asthma, &c. It corrects the alvine discharges and is useful in diarrhœa or dysentery; as an antacid it is used in certain forms of dyspepsia accompanied with acid fermentation, eructations and heartburn. It is one of the safest stimulant emetic and is given in bronchitis when the tubes are choked with mucus, sometimes combined with ipecacuanha to counteract its depressing effects. Externally it is applied to the stings of various insects such as bees, wasps, &c., also to scorpion's bites. As an inhalation it is given to arouse patients from syncope and insensibility, and in a greatly diluted form as in smelling salt in coryza. It or the solution of ammonia forms a valuable ingredient in many of the stimulating liniments, and as such is largely used in rheumatism, in stiff and painful joints, and in some painful neuralgic affections. Aromatic spirit of ammonia is a powerful stimulant, and is given in syncope, hysteria, nervous debility, flatulent colic, &c.; generally preferred to liquor ammonia.

Liquor Ammonii Citratis Fortior.—Strong solution of citrate of ammonia.

Manufacture.—Neutralize citric acid 12 ozs. with strong solution of ammonia 11 ozs. or a sufficiency, then add distilled water to make twenty-four ounces.

Characters.—A clear liquid of a saline cooling taste without any odour. Dose—30 to 90 ms.

Preparation.—Liquor Ammonii Citratis, B. P. Solution of ammonium citrate. It contains ammonium carbonate 14 drms., citric acid 20 drms. and water 1 pint. Dose—2 to 6 drs.

Actions and uses.—Diaphoretic, refrigerant and diuretic, used in fevers with dry skin and scanty high-coloured urine.

Ammonii Chloridum, *B. P., Ammonium Chloride.*

Syn.—*Ammonii Hydrochloras—Ammonii Murias.*

Vernacular.—Eng.—*Sal ammoniac* ; Arab.—*Armina, Milhumar;* Beng.—*Noshagar ;* Burm.—*Lovas, Dzag-wet-tha* ; Can.—*Nav Sagar ;* Cing.—*Nav Charam ;* Duk.—*Nao Sagar ;* Guz.—*Nao Sagar ;* Hind.—*Noshadr, Sohaga ;* Malay.—*Nav Saram, Sadar ;* Pers.—*Noshadar ;* Sans.—*Naosar ;* Tam.—*Navach-charam ;* Tel.—*Nava-saram.*

Manufacture.—Neutralize crude ammoniacal liquor of the gas works or ammonium carbonate with hydrochloric acid, evaporate and sublime ; or heat the gas liquor with sulphuric acid, add sodium chloride to the resulting sulphate of ammonium, and subsequently sublime. It may also be prepared from excretions of various animals or from animal matters. In India it is obtained from unburnt extremities of brick-kilns, in which manure of animals, especially camel's dung, is used as fuel. To this coal and common salt are added and sublimed.

Characters.—It occurs in white granular crystals or as transparent masses composed of needle-shaped crystals arranged in longitudinal bundles. It is very tough and difficult to powder. It is free from odour, and has a saline, disagreeable, nauseous and pungent taste and of a neutral reaction. Liquid extract of liquorice disguises its nauseous taste ; readily soluble in cold water (1 in 3), sparingly soluble in alcohol (1 in 60). Dose—5 to 20 grs.

Used as a lotion (1 in 12), inhalation, vapour, or fumes.

Trochisci Ammonii Chloridi two grains in each, and as compressed tabloids, 3 and 5 grs. in each. Ammonium chloride 1, potasii chloratis 2, oleo resina cubebæ $\frac{1}{8}$, glycyrrhizin $\frac{1}{8}$, mix, make one tabloid to be dissolved in the mouth.

In catarrhal sore throat and in irritability of the pharynx and larynx.

Incompatibles—Ammonium chlordie is incompatible with alkalies, alkaline earths and their carbonates, also lead and silver salts.

Physiological Action.—In small and continued doses, it is alterative and cholagogue. In large doses purgative. It has a marked stimulating action on the mucous membranes, increasing their secretion, also on the absorbent system and on gland structures.

Therapeutics.—It relieves hepatic congestion and modifies hepatic secretions. Mixed with liquorice it is used as an expectorant in chronic bronchitis with tough secretions. As a cholagogue and alterative, it is given in cases of hepatic abscess, chronic hepatic congestion and in dropsy connected with the liver and ovarian diseases; of the liver, in cirrhosis, and in jaundice, from catarrh of the bile ducts. It is highly recommended in gastric catarrh or in biliousness with coated tongue, fœtid breath, flatulence, &c. As an emmenagogue it is of benefit in amenorrhœa and dysmenorrhœa and in passive hæmorrhages. In various forms of neuralgia, rheumatic affections of the face, in intermittent fever, in sick or nervous headaches, acute alcoholism, and in delirium tremens its action is very marked, and before the discovery of the new analgesics, ammonium chloride with opium and magnesium sulphate was the drug employed. As a substitute for mercury, in chronic inflammatory diseases of the glands, such as thyroid body, liver and spleen, it is largely used. Externally combined with potassium nitrate its lotion is applied to the head in headaches, and as a dressing for bruises; also applied in erysipelas, for reducing hernia, in enlarged glands, indolent tumours, inflamed hydrocele and in chronic skin diseases. The natives use it mixed with sulphide of arsenic (*hartal*) as an application to scorpion bites. Of late its inhalation is given with considerable relief in chronic catarrhal bronchitis. Its chief use, however, is in subacute gastric and hepatitis and intestinal catarrh, in painful dyspepsia, and mixed with borax or with cubebs in sore throat.

Ammonii Embelas, Ammonium Embelate.—An ammonium salt of an acid isolated from Embelia Ribes.

Occurs as red acicular crystals. Dose—3 to 6 grs.

Used as an anthelmintic.

Ammonii Fluoridum—Ammonium Fluoride.

Characters.—Deliquescent colourless crystals of a strong saline taste, soluble in water, slightly so in alcohol. Dose—$\frac{1}{24}$ to $\frac{1}{6}$ gr.

Used as a solution 4 grs. to 1 oz. Dose—5 to 20 ms.

Physiological action.—Antiperiodic, alterative, antiseptic, and cardiac depressant. Its action is to suppress butyric, lactic and acetic acid

fermentation, and to increase the action of the gastric juice, to promote the digestion of albumen and hydrocarbon.

Therapeutics.—As cardiac depressant, it lowers the pulse and temperature. It is used in cases of abnormal fermentation in the gastro-intestinal canal leading to disordered digestion, dyspepsia, and flatulence. In hypertrophied spleen and in goitre, the solution is very useful. It is used with benefit in aortic and mitral regurgitation and in aneurism of the aorta. As an inhalation its solution (2 in 1,000) is used in phthisis.

Ammonii Hypophosphis—Ammonium Hypophosphite.

Manufacture.—Add solution of ammonium carbonate to calcium hypophosphite, filter and evaporate.

Characters.—In large white deliquescent crystals of a nauseous saline taste. Soluble in water (1 in 2). Dose—1 to 6 grs.

Actions and uses.—Nervine tonic. Given in phthisis and in diseases with loss of nerve power.

Ammonii Iodidum—Ammonium Iodide.

Manufacture.—Mix together sulphate of ammonium and iodide of potassium in boiling water, then add alcohol, filter and evaporate.

Characters.—Colourless deliquescent cubical crystals or white granular powder turning yellow on exposure to light and air when iodine is liberated. Has a sharp saline taste but no odour when white, but slightly iodine odour when yellow ; soluble in water (1 in 1) and in rectified spirit (1 in 9). Dose—3 to 15 grs.

Actions and uses.—Alterative like potassium iodide, but less depressant. Used in acute catarrh of the nose and bronchi ; in hay fever, syphilis, chronic rheumatism, scrofula, chronic bronchitis, and in incipient phthisis ; also in enlarged glands and in chronic skin diseases. With arsenic it is given in chronic malarial fevers.

Ammonii Nitras—Ammonium Nitrate.—Neutralize nitric acid with ammonium carbonate or potassium nitrate with ammonium chloride. *Characters.*—Colourless crystals or fused masses. Soluble in water (2 to 1), alcohol (1 in 20). On heating to 350° F. it resolves into nitrous oxide gas and vapour of water.

Used in the preparation of nitrous oxide gas.

Ammonii Persulphas.—Ammonium Persulphate. In small colourless crystals, soluble in water. The solution evolves oxygen gas when heated.

Used as an antiseptic for preserving food, being innocuous to the human organism.

Ammoniated Phenyl Acetamide, *see* **Ammonol.**

Ammonii Phosphas, B. P.—**Ammonium Phosphate.** Neutralize solution of ammonia by dilute phosphoric acid, evaporate and crystallize.

Characters.—Transparent, colourless prisms without any odour and of a cooling saline taste. Soluble in cold water (1 in 4), insoluble in alcohol. Dose—5 to 20 grs.

Actions and uses.—Stimulant of the urinary organs and cholagogue. Given in uric acid diathesis and in gout and rheumatism. As an hepatic stimulant it is given in torpid liver.

Ammonii Picras.—Ammonium Picrate, Carbazotate of Ammonia.

Manufacture.—Obtained by the action of picric acid on ammonium carbonate.

Characters.—A yellow crystalline salt in scales or prisms. Soluble in water. Dose—$\frac{1}{8}$ to 1 gr. in pill.

Actions and uses.—Antiperiodic. Used in ague and other malarial fevers and in neuralgia and headaches of India. A good adtiperiodic where quinine and arsenic have failed. It does not disturb the stomach or interfere with digestion.

Ammonium Succinate.—Used in protracted labour cases due to spasmodic contraction of the uterus.

Ammonii Sulpho-Ichthyolas, *see* **Ichthyol.**

Ammonii Salicylas, *see* **Salicylic Acid.**

Ammonii Valerianas—*Ammonium valerianate.*

Manufactures.—Pass ammonia gas into a solution of valerianic acid till the latter becomes neutralized; evaporate and crystallize.

Characters.—Deliquescent white or colourless quadrangular plates, of the odour of valerian; and of a sharp sweetish taste. Very soluble in water, alcohol and ether. Dose—1 to 5 grs.

Actions and uses.—General nervine stimulant and antispasmodic; inferior to asafetida. Used in low state of the nervous system accompanied by fever and in other wasting diseases. As an antispasmodic it is given in hysteria, chorea and other neuralgic affections as hemicrania, palpitations, &c.

Carbon.

This element is met with in its free state in nature over a very wide area, and in combination with other elements it is found in large quantity in all vegetable, mineral and animal substances, and forms a large number of medicinal agents. As met with in the air and in many mineral waters, it is united with oxygen to form carbonic acid gas. Another compound with oxygen is carbonic oxide or carbon monoxide, a gas highly poisonous and formed during the combustion of charcoal. As carbonates (limestone) it is found over a large surface of the earth.

Carbo Ligni, B. P.—Wood or vegetable charcoal.

Vernacular.—Arab.—*Fahm chobi, Zugal;* Beng.—*Kosh tha Kayela;* Burm.—*Thon Misne, Mithwa ;* Can.—*Katiga iddulloo ;* Duk.—*Lakri ka kolsa ;* Guz.—*Lakdano koelo ;* Hind.—*Lakdi ka koyla, Kolsa ;* Malay.—*Arang-bara ;* Malyal.—*Alapa kari, matti kari ;* Mar.—*Lakdacha kolese ;* Pers.—*Laegali-e-chobbi ;* Sans.—*Kasta angaraha ;* Shing.—*Lippe-aughoru ;* Tam.—*Addappu-krri, katai kari ;* Tel.—*Katta bagu, poibogulo.*

Prepared by subjecting any soft wood to a red heat in a closed vessel and then reducing the charred mass to a thin powder.

Characters.—A very light, black powder, without taste or odour. Insoluble in water or alcohol. Being porous, it absorbs gases to a considerable extent. It also contains condensed oxygen gas. When burnt at a high temperature, it leaves about 1½ per cent. of ash. Dose—1 to 2 drs.

Used in the form of biscuits, lozenges and tabloids. Poultices (cataplasma carbonis). Poultice contains wood charcoal 4 drachms, wheaten flour 2 ounces, linseed meal 12 drachms, boiling water 10 fluid ounces. At first stir together over a fire the flour and linseed and then add charcoal.

Physiological action.—Antiseptic, disinfectant, deodorant, and decolorizer. Its action depends upon its power of absorbing and condensing many gaseous bodies and vapours from substances undergoing fermentation and putrefaction.

Therapeutics.—It is used in flatulent dyspepsia with acid eructations, fœtid stools, nausea and vomiting of pregnancy, constipation and intermittent fevers. It is not acted upon in the body, and is found in the fœces unchanged. Externally it is used as a dusting powder or as poultices to wounds, foul and gangrenous ulcers, sores, for correcting fœtor of cancerous discharges, and stimulating them to healthy action. It is also used as dentifrice to remove foul breath and to check caries of

the teeth. In order to purify the air of sick room, pieces of charcoal are placed in dishes and exposed to absorb effluvia.

Carbo Animalis.—Animal charcoal, bone black, ivory black.

Vernacular.—Haddi ka kolsa; Guz.—*Hâdkâ no kolso;* Hind.—*Haddi ka kayla.*

Manufacture.—Prepared from bones by subjecting them to red heat in a closed furnace. The bones are first boiled in water, and subjected to great heat, when the volatile products, ammoniacal fluid, bone spirit, and tar or bone oil and gases are separated.

Characters.—Dull black fragments or powder. Without any odour or taste. Insoluble in water or alcohol. Contains carbon 10 per cent., calcium carbonate and calcium phosphate 90 per cent.

Carbo Animalis Purificatus.—Purified animal charcoal. Obtained by digesting bones with hydrochloric acid when calcium phosphate and calcium carbonate and other earthy salts are dissolved out, then washed and dried. A dull black powder, without any odour or taste. Insoluble in ordinary solvents. Dose—20 to 60 grs.

Actions and uses.—Mostly used as an antidote to poisons; also used to decolorize organic bodies.

Acidum Carbonicum—Carbonic Acid—Carbon Dioxide.

It is met with in the atmosphere 2 to 6 parts in 10,000 and in all waters, in mines, old wells, deep valleys, grottos, in the expired air, and as a product of combustion of carbonaceous substances. It is met with in the blood and other liquids of the body, and originates in the oxidation processes which are constantly taking place in the tissues.

Manufacture.—Obtained by treating calcium carbonate with dilute hydrochloric acid; also produced by the action of yeast plant and by the action of other fermentative processes.

Characters.—A colourless gas without any odour and of a somewhat sharp taste. At ordinary temperature and pressure it is soluble in pure water (1 in 1), more freely soluble at an increased pressure and at a low temperature, and still more freely soluble in water containing phosphates and carbonates than in distilled water. The solution has an acid reaction and, when agitated, is sparkling, due to the rapid escape of carbonic acid gas. Sparkling waters contain it in very large quantities, in some its ratio is as much as 90 per cent.

Preparation.—Aqua carbonata, carbonated water, aqua acidi carbonici, soda water. Carbonated mineral waters as Seltzer, Apollinaris, Virginia, &c.

Physiological action.—Toxic, antiseptic and preservative, refrigerant or exhilerant in an aqueous solution. Locally anæsthetic. As an antiseptic it is used in preserving meat, as a local anæsthetic it causes numbness when applied to the skin or to the tissues, ulcers, &c. Internally as a refrigerant its solutions allays thirst, stimulates the heart and respiration. In large doses it acts as an aperient, diaphoretic and diuretic. When inhaled it is poisonous, 0·1 per cent. of it causes headache and depression of spirits, 0·3 per cent. causes, in addition, giddiness and throbbing of the temples, 10 per cent. excites irritation and spasm, and closure of the glottis, followed by asphyxia often fainting, coma, convulsions and death. When absorbed into the blood it leads to dyspnœa, cyanosis, and to the arrest of the heart's action.

Therapeutics.—Locally as an anæsthetic and antiseptic it excites healthy action in ulcers, relieves pain in cancer. In disorders of the pelvic vicera it is injected into the vagina. When inhaled in a diluted form with 90 or 95 per cent. of air, it gives relief in painful chronic catarrhal affections as chronic laryngitis and pharyngitis ; also in asthma, bronchitis, &c. The aqueous solution is a useful drink in fevers. It relieves nausea, vomiting and gastric irritability. As a diaphoretic and diuretic its baths are used in gout, rheumatism, &c.

Carbon Bisulphidum.—Carbon Bisulphide, B. P. Carbon Disulphide.

Manufacture.—To prepare it heat fragments of charcoal to redness, and drop sulphur upon it from time to time, subsequently condense, distil over and purify.

Characters.—It is a clear, colourless, highly diffusible and highly inflammable liquid, of a strong characteristic, highly offensive odour and sharp or pungent taste, and of a neutral reaction. It vaporizes at ordinary temperature, giving off sulphurous and carbonic acid gases. It is soluble in water (1 in 535), freely soluble in alcohol, ether, chloroform, fixed and volatile oils. Dose—½ to 1 m. It is a good solvent for caoutchouc.

Physiological action.—A cardiac paralyzant, a dangerous anæsthetic. Workers in the fumes of carbon bisulphide suffer from headache, emaciation, want of co-ordination of movements, impairment of motion and sensibility and finally paralysis of the heart. In small doses it is stimulant, diaphoretic, emmenagogue, and anæsthetic. The vapour is anodyne ; if inhaled directly, it excites violent coughing ; it locally blunts the sensibility of the part to which it is applied.

Therapeutics.—It is used in removing ingrowing of nails, in opening abscesses and in relieving facial neuralgia, headache, also local pains as in toothache, earache, syphilitic periostitis, cancerous and other growths, &c.; it relieves the pains of cancer of the stomach, allays gastralgia and also vomiting. Like salicylic and carbolic acids it arrests putrefaction, and like hyposulphites of soda it is an effective agent against fermentation, destroying vegetable and animal germs.

Carbonis Tetrachloridum—Carbon Tetrachloride.

A heavy, mobile, volatile liquid, of a pleasant pungent quince-like odour. Used as inhalation.

Action and uses.—Anæsthetic. Locally applied, it relieves neuralgic pains, and given as inhalation in hay fever. It is less irritating than chloroform, but far more dangerous to the heart, and hence not used as a general anæsthetic.

Sulphur.—Brimstone.

Sulphur from sal, salt, and phur, fire, a salt having combustible quality.

Brimstone—Brynstone, meaning a burning stone.

Vernacular.—Arab.—*Kibrika, Kibrit;* Beng.—*Gandraka;* Burm.—*Kan;* Eng.—*Brimstone;* Guz.—*Gandhak;* Hind.—*Gaogird, Gandak;* Malay.—*Balirang;* Pers.—*Gowgird;* Sans.—*Gandhaka;* Singh.—*Gandhaka;* Tam.—*Gendagum;* Tel.—*Gendagum.*

A non-metallic element, known as native or virgin sulphur, a product found free in beds of gypsum and in regions of extinct vulcanoes; also found extensively in nature in combination with several metals, as sulphates and sulphides as the ores called pyrites—sulphides of iron, copper, lead, mercury, &c. It also occurs in many vegetable and animal substances. It is obtained by roasting, fusion or by sublimation.

Characters.—A greyish-yellow, soft powder or a brittle solid, free from grittiness and from the smell of hydrogen sulphide.

Sulphur Sublimtum, B. P.—Sublimed sulphur, flowers of sulphur.

Gundhak nâ phula (Guz.).

Manufacture.—Prepared from crude or native sulphur by sublimation or from sulphides by roasting and condensing the vapour.

Characters.—A fine, bright, greenish-yellow, gritty powder, of a peculiar characteristic odour; soluble in ether, hot turpentine, bisulphide of carbon; slightly so in fixed oils; insoluble in water or alcohol.

Ignited, it burns with a blue flame, forming sulphurous anhydride, and is entirely volatilized by heat. Dose—20 to 60 grs.

Sulphur Lotum—washed sulphur.—Sulphur depuratum.

Manufacture.—Digest sublimed sulphur with diluted ammonia water for some time, wash and dry.

Characters.—A fine yellow powder without any odour or taste. Neutral reaction. Dose—As a stimulant, 5 to 10 grains. As a laxative, 20 to 60 grains.

Preparation.—Confectio Guaiaci Composita—contains guaiacum powder 2, sublimed sulphur 3, magnesium carbonate 2, ginger 1, and treacle 12. Dose—1 to 2 drms. Unguentum sulphuris, B. P. (1 to 9). Confectio Sulphuris, B. P. (4 in 9) contains sublimed sulphur 4 ounces, potassium bi-tartarate 1 ounce, tincture of orange peel ½ fluid ounce, syrup 2 fluid ounces, powdered tragacanth 18 grains, glycerine 1½ fluid ounce. Dose—1 to 2 drachms.

Sulphur Præcipitatum, B. P.—Precipitated sulphur. Milk of sulphur. Lac sulphuris. *Amalsaro Gandhaka* (Hind.). Pale yellow sulphur.

Manufacture.—Boil sublimed sulphur 5 ounces, with slaked lime 3 ounces, and water 30 ounces. The sulphide and the hyposulphite of calcium and the sulphate are formed ; to this add hydrochloric acid ; sulphur is precipitated. This is repeatedly washed till it becomes tasteless, and dried.

Characters.—It occurs as a pale, yellowish-white powder, free from grittiness, tasteless and without any odour ; neutral in reaction ; freely volatilized by heat ; insoluble in water or alcohol, freely soluble in carbon sulphide, or in a hot solution of soda. It is completely volatilized by heat. The old-fashioned milk of sulphur contained sulphate of calcium. Dose—20 to 60 grs.

Preparations.—Trochisci sulphuris, B. P., each containing 5 grains. Contains precipitated sulphur 5 grains, acid tartrate of potassium 1 grain, and tincture of orange as a flavouring agent. Unguentum Sulphuris Compositum.—Hebra's itch ointment, Wilkinson's ointment. Contains sulphur, chalk, soft soap, juniper tar oil and lard.

Sulphuris Chloridum.—Sulphur Chloride.

Manufacture.—Prepared by direct combination of chlorine and sulphur.

Characters.—Reddish yellow powder of a penetrating odour, soluble in benzol. It is decomposed by alcohol, water or ether.

Preparation.—Unguentum Sulphuris Hypochloritis.—It contains sublimed sulphur 12, chloride of sulphur 2, essential oil of almonds 2, and prepared lard 84. As a parasiticide used for acne, scabies, &c.

Sulphuris Iodidum, B. P.—Sulphur Iodide.

To prepare it, rub together iodine and sublimed sulphur (4 to 1), then heat the mixture and allow the liquefied mass to cool.

Characters.—A greyish-black solid substance, crystalline in appearance and of the smell of iodine. It stains the skin; has faintly acid reaction, soluble in glycerine (1 in 60) and in bisulphide of carbon, insoluble in cold water. In boiling water iodine passes off in vapour, leaving the sulphur as an insoluble residue. Dose—½ to 2 grs.

Preparation.—Unguentum Sulphuris Iodidi, B. P.—Iodide of sulphur ointment. Contains sulphur iodide 2, glycerine 2, and benzoated lard 46. Mix.

Gandhaka Kalk.—Take of sulphur 1 part, myrabolans (himaja) 1 part, juice of bhangra 3 parts, honey 2 parts, butter 1 part, mix together and make a paste (*châtan*).

Used as a laxative. Dose—20 to 40 grs. In constipation.

Gandhaka Rasayana.—Take of sulphur 2 parts, pârâkajali 1 part, triturate in the juice of aloe leaves (koomâr) till the whole forms a uniform paste. Then heat it, and when cool add honey and butter each 2 parts. The confection is used as an alterative. Dose—1 to 2 drachms. In chronic skin diseases.

Gandakha Lepa.

Manufacture.—Triturate sulphur in the juice of garmâlo leaves.

Used as a plaster for rheumatic, scrofulous and other painful joints.

Gandhaka Tela.

Manufacture.—Triturate sulphur in the juice of lemons. To the mass add milk and boil. On cooling it will separate, as an oily liquid of a yellow colour and sulphurous smell. Dose—1 to 2 ms. Used as an alterative in skin diseases.

Physiological action.—Sulphur is a parasiticide, alterative and laxative. In small doses it acts as a mild laxative and diaphoretic. Taken into the gastro-intestinal canal it passes off unchanged. Some of it is converted into sulphuretted hydrogen and sulphides and may be found in the sweat, urine and fœces, and discolouring silver ornaments worn next the skin. As sulphides it is

absorbed into the blood and converted into sulphates, and as such it is found in the urine. In large doses it irritates the gastro-intestinal tract, stimulates the intestinal gland secretions, increases their peristalsis, and, if continued for a long time, it interferes with digestion and gives rise to tremors and great debility.

Therapeutics.—As a parasiticide and local stimulant, it is used with mustard oil to relieve cutaneous irritability as in scabies, impetigo, prurigo, eczema, psoriasis, &c., as a stimulant of the mucous membranes it is used in constipation in children. Mixed with potassium tartrate it increases peristalsis. It is also given in cases where pultacious and other than liquid motions are required as in hæmorrhoids, and anal fissures. It is also given in chronic bronchitis of old people and in asthma. As an alterative it is given in hepatic congestion, painful menstrual disorders, in gout, muscular rheumatism, chronic rhumatoid arthritis, and in chorea. As sulphur fumigation its vapour containing volatile sulphurous acid, which has strong bactericidal property, is used to disinfect sick rooms. As an inhalation it is of benefit in whooping cough.

As an application the natives use sulphur with powdered stramonium seeds (5 to 1) and mixed with mustard oil in skin diseases, and as an inhalation the fumes are used in diphtheria. Sulphur baths and sulphurous mineral waters which are solutions of sulphuretted hydrogen or of the alkaline sulphides are used in chronic skin diseases, rheumatism, lead poisoning and in mercurial ptyalism. Sulphur iodide is an alterative, and given in scrofula, syphilis, &c. The ointment is used in eczema, psoriases, sycosis, &c.

Remarks.—In the native bazaar several varieties of sulphur are found, namely, roll sulphur, *Lâthâno Ghandhak*; stick sulphur, *Pâsâno Ghandhak* (facetted sulphur), and *Râti Hirâkasi* or red sulphur, the last is found in small flat or irregular crystalline pieces used in the preparation of gold from its ores.

Acidum Sulphuricum.—Sulphuric acid, B. P.

Vernacular.—Eng.—*Sulphuric acid, Oil of Vitriol;* Arab.—*Ruch, Maulkibrit;* Cing.—*Gandaka rasa;* Guz.—*Gandhakno tejab;* Hind.—*Gandak ka tejâb;* Pers.—*Arak-i-gowgird;* Tam.—*Ghendaga travagum.*

Manufacture.—To obtain it, burn sulphur or sulphur pyrites. Oxidize sulphurous anhydride thus obtained with nitrous anhydride, and hydrate it by means of aqueous vapour. It contains 98 per cent. by weight of hydrogen sulphate.

Characters.—It is a colourless, heavy, oily liquid, highly caustic and corrosive, without any odour and strong acid reaction. When

mixed with water it evolves much heat, sp. gr. 1·843. Fuming sulphuric acid contains sulphuric anhydride dissolved in sulphuric acid. It gives off white fumes on exposure to the air.

Acidum sulphuricum aromaticum, B. P. Elixir of vitriol. Tinctura aromatica acida. Contains sulphuric acid 3 fluid ounces, tincture of ginger 10 fluid ounces, spirit of cinnamon $\frac{1}{8}$ fluid ounce, and alcohol 29½ fluid ounces. Dose—5 to 20 mm.

Used in the preparation of infusum cinchonæ acidum 1 in 80. Dose—½ to 1 fld. oz.

Acidum sulphuricum dilutum, B. P.

Diluted sulphuric acid. It contains 13·65 per cent. by weight of hydrogen sulphate, sp. gr. 1·094. Dose—5 to 20 mm.

Physiological actions.—A powerful escharotic, but inferior to nitric acid ; parts touched with it become white at first, then brown black. In the diluted form it is absorbed into the blood and eliminated by the skin, kidneys and bowels. In small doses it is hæmostatic, astringent, tonic and refrigerant.

Therapeutics.—As a refrigerating drink it is given in fevers, and as an acid drink in acidity of the stomach, in dyspepsia, and in general debility. With lead salts it forms an insoluble sulphate, hence useful as a remedy in lead poisoning and in colica pictonum. As a remote astringent it is mixed with gallic acid and given in diarrhœa, passive mucous discharges and passive hæmorrhages from the stomach, lungs, kidneys, uterus, &c. ; also in excessive night sweats of phthisis. Externally strong acid is used as an escharotic in caries of bones and for cancerous growths. As a gargle the weak solution is used in sore throat. A very weak ointment (10 per cent.) is recommended in scabies, ringworm, &c.

Acidum sulphuricum aromaticum is an agreeable aromatic tonic, given to check passive discharges and perspirations in phthisis and other exhausting diseases.

Acidum Sulphurosum, B. P.—Sulphurous acid.

Manufacture.—Burn sulphur in air or oxygen, or boil sulphuric acid with charcoal, mercury or copper till it is deoxidized or till the evolution of gas has ceased. Pass the residue into distilled water. The aqueous solution contains 6·4 per cent. of hydrogen sulphite, equal to 5 per cent. by weight of sulphurous anhydride. Sp. Gr. 1·025.

Characters.—It is a colourless liquid, of an acrid, sulphurous taste, and of the odour of burning sulphur ; reaction highly acid. Dose—½ to 1 dr., largely diluted with water.

Used as solution with glycerine and as emulsion with fat.

Preparations.—Sodii sulphis. Dose—10 to 20 grs., and sodii hyposulphis, 5 to 15 grs.

Physiological action.—Antiseptic, deoxidizer, disinfectant and germicide. It has a great affinity for oxygen. Its chief value depends upon its power of destroying low vegetable life. The gas, if inhaled, causes œdema of the glottis and inflammation of the respiratory passages.

Therapeutics.—Externally, the solution is used to remove fœtor from sores, wounds, cuts, ulcers, &c., and to promote their healing. As a spray it is used diluted in aphthæ, diphtheria, syphilitic laryngitis, tonsillitis and thrush. The solution is applied to remove sordes from the gums and teeth. The emulsion is used in certain parasitic skin diseases. Internally, it is given as an antiseptic in dyspepsia and in flatulence due to gastric fermentation, as in sarcinæ and penicilium in the stomach. It has been tried as an internal disinfectant in specific fevers and in low states of the system.

Hydrogen sulphide.—Sulphuretted Hydrogen, B. P.

To obtain it, add sulphuric or hydrochloric acid to iron sulphide.

A colourless gas, has a strong fœtid smell of ordure or rotten eggs.

Actions and uses.—It is poisonous both to the animal and plant life. If inhaled for a long time, it decomposes the blood, destroys tissue functions, and paralyzes the muscles and nerves; absorbed into the blood, it leads to asphyxia, muscular tremors, followed by convulsions and death. It is lately used in the treatment of phthisis. In such cases carbonic acid gas is injected into the rectum after it has been passed through sulphuretted water. The gas is readily absorbed and eliminated by the bronchial and pulmonary surfaces, and is believed to come in contact with the organisms of phthisis. Under its use cough becomes less, sputum improves, sweating ceases, and the general condition improves. Sulphurated lime, taken internally, liberates sulphuretted hydrogen in the system.

Phosphorus, B. P.

Phosphorus, means that which emits light in the dark. A solid, non-metallic element obtained from bones. Met with in nature, as phosphates of iron, aluminum, calcium, &c. It is also a constituent of plants and animals, constituting 60 per cent. in bones as calcium phosphate. It is also found in tissues and fluids of the body.

Manufacture.—Reduce bones (calcium phosphate) to a coarse powder, and add sulphuric acid. Calcium sulphate is precipitated, and calcium acid phosphate remains in solution. The solution is next mixed with sand and charcoal to remove oxygen. On distilling it, phosphorus vapourizes, and is condensed under water.

Characters.—A waxy-looking, nearly colourless solid, of the consistence of bee's-wax, generally translucent and highly volatile, of a very disagreeable, pungent taste and garlic-like odour. It emits, on exposure, white fumes. When fresh, it is luminous in the dark, but turns black by keeping. Takes fire spontaneously. Usually it contains arsenic and sometimes sulphur. Insoluble in water, to which it imparts its characteristic odour and taste. Soluble in absolute alcohol (1 in 350), in olive or any fatty oil (1 in 80), in ether (1 in 80), in chloroform (1 in 25), in bisulphide of carbon (1 in $\frac{1}{2}$), freely soluble in boiling oil of turpentine and in oil of peppermint. Dose—$\frac{1}{100}$ to $\frac{1}{50}$ of a grain.

Amorphous or Red Phosphorus.—This is an allotropic variety of phosphorus.

Manufacture.—Obtained by heating phosphorus without access of air.

Characters.—A red powder, less fusible, unoxidizable in the air. Insoluble in carbon bisulphide and not readily inflammable. Administered in pills with milk sugar or with green hyacinth or with glycerine. Action—if pure : it is inert, but generally it contains ordinary phosphorus and hence dangerous.

Preparations.—These should be freshly made, and kept in a cool place and away from the light.

Oleum Phosphoratum, B P.—Phosphorated oil, containing 1 per cent. of phosphorus by weight in expressed oil of almonds. A clear, straw-coloured liquid. Phosphorescent in the dark. Used as liniment or eye-drops (1 in 300) or internally with cod liver oil. Dose —1 to 5 ms.

Oleum Morrhuæ Phosphoratum.—Phosphorated Cod Liver oil $\frac{1}{100}$ gr. in 1 dr. Dose—1 to 4 drs.

Pilula Phosphori.—Phosphorus pill, B. P. Contains white bees'-wax 12·5 grs., phosphorus 1, lard 12·5, kanolin 11·5, carbon bisulphide 3. Make a mass, mix the mass with gum acacia (3 to 1), and coat or varnish with balsam of tolu shaken with ether. Contains 2 per cent. of phosphorus. Dose—1 to 2 grs.

Sevum Phosphoratum.—Phosphorus 1, carbon bisulphide 5, add prepared suet 9 (1 in 10).

Pilula Phosphori cum Ferro.—Contains phosphorated suet 10 grs., reduced iron 150 grs., chloroform 15 ms., compound tragacanth powder 10 grs. Mix. Make 50 pills, and cover with sandarach solution. Contains phosphorus $\frac{1}{50}$ gr. and iron 3 grs. Dose—One pill.

Pilula Phosphori cum Quinina.—Phosphorated suet 10 grs., quinine 50 grs., chloroform 20 ms., compound tragacanth powder 10 grs. Make 50 pills. Contains phosphorus $\frac{1}{50}$ gr. and quinine 1 gr. in each pill. Dose—One pill.

Pilula Phosphori cum quinina et strychnine same as above with $\frac{1}{40}$ gr. of strychnine.

Pilula Damianæ Composita.—Contains damiana 2 grs., phosphorus $\frac{1}{100}$ gr., and nux vomica $\frac{1}{8}$ gr. in one pill.

Tinctura Phosphori Composita.—Compound tincture of phosphorus. Phosphorus $\frac{1}{10}$ gr., dissolved in chloroform 10 and absolute alchohol 50. Dose—3 to 10 ms.

Æther Phosphoratus.—Æthereal tincture of phosphorus (1 in 150 by weight). Dose—1 to 10 ms.

Elixir Phosphori.—Elixir of phosphorus. Contains $\frac{1}{50}$ gr. in a drachm. Dose—15 ms. to 1 dr. Well borne by the stomach.

Zinci Phosphidum.—(*See* **Zinc.**)

The Hypophosphites.—Convenient forms for administering phosphorus. They contain phosphorus in weak combination, decomposing, when heated, into phosphoretted hydrogen and pyrophosphate. They are all soluble in water. They emit, like phosphorus, white fumes when held before the flame of a candle. Crystallizable and soluble in water. The solutions oxidize on exposure to light and air. They are used as nervine tonics and given in tubercular affections. The following are the important preparations of hypophosphites :—

Ammonii Hypophosphis.—Dose—1 to 6 grs. (*See* **Ammonia.**)

Calcii Hypophosphis, B.P.—Dose—3 to 10 grs. (*See* **Calcium.**)

Ferri Hypophosphis, Ferrous Hypophosphite.—Dose—1 to 5 grs. (*See* **Iron.**)

Manganesii Hypophosphis.—(*See* **Manganese.**)

Potassii Hypophosphis.—Dose—1 to 6 grs. (*See* **Potassium.**)

Sodii Hypophosphis, B.P.—Dose—3 to 10 grs. (*See* **Sodium.**)

Syrupus Hypophosphitum Compositum.—(*See* **Hypophosphite.**)

Glyceritum Hypophosphitum Compositum.—Contains ingredients of the compound syrup, with glycerine instead of syrup.

Preparations of Glycero-phosphoric Acid.—Lithii glycero-phosphas. A white, amorphous powder, freely soluble in water. Dose—3 to 8 grs. Magnesii glycero-phosphas.—Dose—3 to 10 grs. Quinine glycero-phosphas.—Dose—3 to 8 grs. Sodii glycero-phosphas.—A transparent, straw-coloured, pasty mass, freely soluble in water, used in 50 per cent. solution.—Dose—5 to 10 grs. Strontii glycero-phosphas.—Dose—3 to 8 grs. Manganesii glycero-phosphas.—Dose—1 to 3 grs. Elixir glycero-phosphatum.—Contains calcium glycero-phosphate 2, sodium glycero-phosphate 2, iron glycero-phosphate 1, and aromatic syrup 250. Dose—1 to 4 drs. Syrupus glycero-phosphatum.—Contains calcium glycero-phosphate 6, sodium glycero-phosphate 2, magnesium glycero-phosphate 2, iron glycero-phosphate 1, tincture of ignatia amara 2, pepsin 3, maltine 1, tincture of kola 10, syrup of cherries 200. Dose—1 to 4 drs.

Vinum glycero-phosphatum.—Contains 1 per cent. each of calcium and sodium glycero-phosphates in cinchona and kola wine. Dose—4 to 12 drs.

Physiological action.—Stimulant, nervine tonic and aphrodisiac; uncombined phosphorus is a violent poison. It is more energetic than the chemical compounds. In small doses it is a stimulant of the brain, heart, stomach and the genital organs. It assists the growth of bones. In large doses it is poisonous, and a powerful irritant of the gastro-intestinal tract. It causes nausea, vomiting, purging and great depression of spirits. Absorbed into the blood, it acts as an hæmatinic; it increases the red corpuscles. It diminishes the excretion of urea, and causes fatty degeneration of the arterioles and the heart; also degeneration or acute atrophy of the liver, leading to jaundice, delirium, coma and death. *Therapeutics.*—Phosphorus is given in cases of malnutrition, as rickets, osteomalacea, scrofula, phthisis, &c. It is used extensively in nervous debility, in chronic nervous exhaustion, in tubercular meningitis, in threatening cerebral softening, in paraplegia due to excessive venery, in epileptiform vertigo, and melancholia; also in progressive locomotor ataxia, mental worry in certain forms of neuralgia, ticdouloureux, hemicrania, angina, lencocythemia and in pernicious anæmia. In insomnia in old people

it is given with retinol as a solvent with benefit. As an aphrodisiac it is extensively used in sexual exhaustion and impotence. In skin diseases, as eczema, lupus, psoriasis, it is used internally to stimulate the cutaneous nerves, and is a good substitute for arsenic.

Acidum Phosphoricum Concentratum, B.P.—Concentrated phosphoric acid. Contains 66·3 per cent. of hydrogen orthophosphate, with 33·7 per cent. of water.

To obtain it, burn or oxidize phosphorus in open air, treat the residue with diluted nitric acid, until nitrous fumes cease to form.

Characters.—Colourless, syrupy liquid. When evaporated, it leaves a residue which, when cold, forms glasslike crystals or sticks. Highly deliquescent. Absorbs moisture from the air, and becomes liquid. It is then known as orthophosphoric acid. It is without any odour. It has acid taste and acid reaction. Sp. Gr. 1·5. When heated at a higher temperature, it becomes converted into glacial phosphoric acid or meta-phosphoric acid. Dose—1 to 4 ms.

Acidum Phosphoricum Dilutum, B.P.—It contains 13·8 parts of hydrogen orthophosphate and 86·2 of water.

Characters.—A colourless liquid, of an acid reaction. Dose—5 to 20 ms. Used also as a solution 10 per cent.

Acidum Phosphoricum Glaciale.—Meta-phosphoric acid. In colourless crystalline masses or sticks. On exposure to the air, it absorbs water and is converted into orthophosphoric acid.

Pyrophosphoric acid.—A product of dehydration of phosphoric acid.

Preparation.—Pyrophosphate of iron.

Actions and uses.—Diluted phosphoric acid, in small doses, is tonic, aphrodisiac and refrigerant. In large doses it is a nervine stimulant. It is given in diabetes, in advanced stages of typhoid fever, in calculous affection and to neutralize alkaline urine. It is also used as an alterative in strumous diseases, as rickets, tuberculosis and scrofula. It dissolves phosphatic deposits. Locally, the solution is used as an injection in tubercular glands of the neck and in tuberculosis of the joints. The solution is also applied to the skin in pruritus, eczema and ulcers.

Acidum Hypophosphorosum—Hypophosphorus acid.

Manufacture.—Heat phosphorus with solution of potassium, sodium or calcium hydroxide. Hypophosphite of sodium, potassium or calcium is formed. Decompose this with tartaric or oxalic acid.

Characters.—It is a colourless liquid, of an acid taste. Contains about 30 per cent. of the hypophosphorus acid. Sp. gr. 1·1367.

Used in the preparation of hypo-phosphite solutions and their syrups and as a solvent for morphine and strychnine for hypodermic injections. Dose—2 to 5 ms.

Preparation.—Acidum Hypophosphorosum Dilutum.—Diluted hypophosphorus acid, an acid without any odour or colour. Sp. Gr. 1·046. It contains about 10 per cent. by weight of the pure acid. Dose—10 to 40 mm.

Actions and uses.—Hypophosphorus acid and the hypophosphites are good nervine tonics and highly assimilable. Given in nervous debility, in incipient stage of phthisis, anæmia and epilepsy; also useful in acne.

Saccharated Wheat Phosphates.—The soluble part of bran, consisting of organic phosphates and cerealin, combined with milk sugar. Useful for rickety children and in impaired digestion and defective assimilation. Dose—½ to 1 dr.

SILICIUM—SILICON.

Silicon, in combination with oxygen, is known as silica or the earth of flints. It is found in nature as silicon dioxide, in rocks, crystals, sand, flint, quartz, agate and various other stones, and in earths and clay; also as silicates in basalt, felspar, granite, mica, porphyry, &c. Like boron, it resembles carbon.

Manufacture.—Heat together double fluoride of potassium and silicon with its equal weight of metallic potassium. Throw the fused mass into cold water, when silicon will be left behind.

Characters.—Crystal or amorphous, dark-brown powder. Non-fusible, insoluble and non-volatile. Heated in the air, it becomes converted into silica.

Silica.—Silicon Dioxide. Silicic Oxide.—Contains silicon 28 and oxygen 32 parts.

Manufacture.—Fuse sand, rock crystal, quartz, agate or flint with sodium carbonate; lexiviate the product with boiling water, and filter; add hydrochloric acid to the filtered liquid, and evaporate to complete dryness.

Characters.—A fine, white, tasteless powder. When heated, it forms salts with sodium, potassium and magnesium. It is freely soluble in strong alkaline liquids, insoluble in water, insoluble in dilute acids.

Liquor Sodii Silicatis. Solution of Sodium Silicate. Syn.—Water glass, soluble glass solution.

Characters.—Semi-transparent, yellowish, viscid liquid, of the consistence of treacle, without any odour, and of a sharp saline taste and alkaline reaction. Contains silica 20 per cent. and soda 10 per cent.

Used as a solution (1 in 10) for lotion or injection.

Actions and uses.—Astringent, antiseptic and antiferment. Has some power of arresting putrefaction of organic matter. Mainly used in impregnating surgical bandages. Being lighter, it is used in place of starch and plaster of paris. Like collodion, it forms a coating in erysipelas. The solution when diluted is used as an antiseptic for injection in gonorrhœa and leucorrhœa, also in vaginitis, cystitis, and into the nose in ozœna, and as a wash in uterine ulceration.

Liquor Potassii Silicatis goes by the same name, and is used for the same purposes as liquor sodii silicatis.

Magnesii Silicas Hydratus, Hydrated Magnesium Silicate. Meerschaum.—A mixture of silica, alumina, iron, and magnesia. A mineral used in the manufacture of smoking pipes. As an absorbent, the powder is used in obstinate choleraic diarrhœa. Dose—½ to 1 dr.

Talc or Venetian Talc.—A silicate of magnesia, softer than French chalk.

French chalk.—A natural silicate of magnesium, a soft, unctuous powder.

Sodii Fluosilicas—Sodium Fluosilicate—Silico-fluoride of sodium.

Characters.—Crystals or white granular powder, without any odour and without taste. Soluble in water (1 in 200).

Used as injection 2 per cent., gargle ½ per cent. A solution otherwise known as *salufer*, consists of a solution of this salt.

Actions and uses.—Non-irritant, disinfectant, antiseptic, germicide, deodorant and styptic. As an injection, it is used in gonorrhœa; as a mouth-wash or gargle, in diphtheria and sore throat; as a solution for carious teeth, wounds and for irrigating abscess and other cavities.

Mica—Mica or Muscovy Glass—Is composed of calcium and magnesium silicate, with silicate of iron.

Vernacular.—Arab.—*Kabubul ars;* Cing.—*Kin;* Chin.—*Ahih;* Duk.—*Tulk;* Eng.—*Talc or Venetian talk;* Guz.—*Abrak;* Hind.—*Avrak, Abhrak;* Pers.—*Talk;* Sans.—*Abraka.*

Muscovy glass.—It is used in Russia as a substitute for glass.

Characters.—Softer than French chalk. Chiefly found in mountains. It is a kind of crystalline mineral, of a foliated texture, capable of being divided into extremely thin flakes or leaves, having a sensible elasticity and a metallic lustre. The flakes are transparent, soft, and can easily be scratched; when divided across, the plates seem rather to tear than break. The natives speak highly of this drug. There are four varieties—(1) yellowish-white, (2) nearly black, (3) reddish-brown or greenish, and (4) silvery-white. Of these only two—the nearly black and silvery-white—are generally used in medicine.

Mica Powder.—Boil mica in the decoction of triphalâ for a long time, or roast or calcine it over a fire, alternately soaking it in the juice of lemons, till the scales are separated. The calcined scales are ultimately mixed with the paste of *tandul bhàji* and finally dried. A hard, heavy, rose-coloured, amorphous powder, of a saline and earthy taste.

Preparations.—Dhânya Abrak. Mix together mica powder and powdered rice in equal parts, soak it in hot water, then strain, and finally dry.

Shashraputi Abrak.—Soak the powder in the juice of akado (calotropis gigantea) and then calcine; a dark, heavy powder; taste earthy.

Abraka Bhasma.—Heat together dhânya abraka 1 part and borax 2 parts. Triturate the whole in milk and evaporate. Generally given with loha bhasma. Dose—2 to 5 grs.

Abraka Kalka (Chatan) Emulsion.—Abraka bhashma, amala, ginger, pepper, long pepper, vavadinga—equal parts. Mix and reduce the whole to a uniform mass, then add honey. Dose—10 to 40 grs.

Actions and uses.—Astringent, tonic, aphrodisiac and alterative. As a tonic it is used in dyspepsia, low chronic fevers and in seminal weakness; combined with iron (mandura) it is given in dyspepsia, asthma and consumption, and in cachexia due to long continued discharges from fistulæ, abscesses, gonorrhœa, leucorrhœa, &c. As an astringent it is largely used in diarrhœa, especially of nervous origin. As an alterative it is used in enlargement of glands.

Silicate of Aluminum, Felspar or Clay.—Under peculiar circumstances and by the action of the carbonic acid gas of the air, this mineral after a long time suffers complete decomposition, and is converted into a soft, friable mass of earthy matter (clay) resembling soft mortar. When the decomposing rock contains, besides felspar, oxide of iron, the clay produced is iron-coloured. The dark appearance of some clay is due to its containing bituminous matter.

Vernacular.—Hind.—*Chikni mitti, Gel, Lang-i-dalam*; Malay.—Can.—*Nâma*; Guj.—*Khadu*; Duk.—*Khâr, Dhoi-huvi-khari*; Pers.—*Kadi*; Tam. and Tel.—*Namon.*

Prepared or purified pipe-clay is used in medicine as a dusting powder.

Gopichandan.—Gopichandan is derived from Gopi, a lake near Dwarka, and chandan sandalwood. A white earth taken from Dwarka. It is a kind of clay brayed in water and, like chandan, used by the Hindus to make sectarian marks on their faces, chests and arms.

Vernacular.—Bomb.—*Gopichandan*; Hind.—*Panisoka.*

Panisoka is derived from *pani* water and *soka* to absorb. This clay is an absorber of water.

Characters.—A manganesium iron and an aluminium yellow earth found in pieces of various shapes, sometimes in the form of dice or round gray balls, sometimes as two curry dishes, one placed over the other; the cut surface resembles Multani mâti, but, unlike it, it is not stratified. The taste is earthy and peculiar, smell resembling that of Multani mâti. Water poured upon it is soon absorbed. Used as an absorbent powder.

Actions and uses.—Cooling and desiccant. It is applied to the forehead with rose-water to relieve headache and also to inflamed boils. From its property to absorb moisture, it is used locally for unhealthy discharges from wounds and ulcers.

Kaolinum, B.P.—A native white aluminium silicate.

Habitat.—China, Ceylon, S. and E. Asia.

Vernacular.—China clay. Porcelain clay; Cing.—*Kira matti.*

Occurs naturally in some parts of England. To obtain it, purify native white aluminium silicate by elutriation, which removes silica and undecomposed felspar. It is thus converted into a soft, friable, whitish, earthy mass. It is pulverizable, insoluble in water or in dilute acids. Pure kaolin contains alumina 70, silica 26, iron oxide 4.

Unguentum kaolin contains vaseline, paraffin, and kaolin.

Actions and uses.—Emollient. Used as an absorbent or as a dusting powder for infants and for irritable skin. A paste of it is used as a cooling application to the head in fevers. Also applied to the scrotum, in epididymitis, and to other enlarged glands. Its chief use in pharmacy is as an excipient with paraffin for making pills, containing decomposable substances, such as permanganate of potassium, &c.

Kieselguhr.—Syn. White Peat. A diatomaceous earth which, when burnt into a furnace, turns into an extremely light powder. It is composed of almost pure silica.

Actions and uses.—With iodoform it is used in insufflations owing to its lightness and absorbent property in naso-pharyngeal affections and gynæcological practice; also for dressing either a soft or a hard chancre. A powder composed of burnt kieselguhr and iodoform, to which a varying proportion of eucalyptus oil or other fragrant substance is added, is used as a dusting powder in erythema, eczema and erysipelas.

Cimolite.—White Fuller's Earth.—Syn. Terra cimolia.

Characters.—A natural variety of steatite, composed chiefly of silicate of magnesium. A soft, dull, greasy kind of clay.

Actions and uses.—It has the property of absorbing oil and greasy matter. Used in excoriations and cracks. As a dusting powder in eczema, it is superior to zinc oxide, calamine, bismuth carbonate, and starch.

Thymolite.—A silicate of magnesium preparation, containing thymol. Used as an application for prickly heat.

Dimatos.—A light, infusorial earth, consisting principally of silica.

Emol.—Emol is a silicious product, containing alumina, lime and steatite. Resembles China clay.

Characters.—Flesh-coloured impalpable powder, as soft as down to the touch. It contains a considerable quantity of soapstone, as well as silica, alumina, traces of calcium salts and ferrous oxide. Used as dusting powder.

Actions and uses.—Emollient, absorbent, astringent and antipruritic, allied to Fuller's Earth. As a dusting powder, it is quite innocuous. As an antipruritic, it is used in urticaria, during the eruptive period of measles, in eczema, erythema, &c.

Fuller's Earth.—An aluminium silicate, with traces of iron. Grey coloured powder, less pure than kaolin.

Used in the fulling of cloth, its property being to absorb oil and greasy matter. It is similar to kaolin, but less pure.

Seleinte.—A native calcium sulphate; a variety of gypsum. A soft and pearly powder, used as a dusting powder.

Sanga Jirun.—It is composed of alumina, sulphate of lime, oxide of iron, and silicate of magnesia.

Vernacular.—Eng.—*Soapstone, Potstone;* Guz.—*Sanga jirûn, Sankha jirûn;* Hind.—*Sange jirahata;* Mah.—*Shankha jiri;* Pers.—*Sange jirahata;* Tam.—*Bulpam.*

Sang jirûn, a corruption of Sang jirâhat, which means a styptic stone.

Characters.—Flat, irregular pieces or thick masses; colour brownish-white or grey. Flat or very smooth and unctuous to the touch. It has the appearance of soap. Insoluble in water. Without any taste, easily pulverizable, and yields a soft, slippery powder. On section the cut surface is silvery, shining, and granular. Dose—5 to 20 grs.

Actions and uses.—Astringent, desiccant and styptic. With milk, cream or brown sugar it is given in dysentery, diarrhœa, menorrhagia and leucorrhœa. Externally it is aplied to syphilitic sores and ulcers, and also to check bleeding from the nose and from external wounds. A paste of it is applied with whey to burns and scalds.

Bezoar.—It is composed of silicate of magnesia, iron and antimony.

Vernacular.—Arab.—*Faduj mâdani, Badsahre, Hajr-ul-bahr;* Bomb.—*Pousera mâdani;* Cing.—*Visagul;* Duk.—*Kâni-pao-sehar, Gairun;* Eng.—*Mineral stone, serpent stone;* Guz.—*Zera mahrâ, Geru chandana;* Hind.—*Pedaru basoar, Kani-sahr-mohrâh;* Malay.—*Goliga, Mantika;* Pers.—*Gaosereh, Pâdzahre-kâni;* Sans.—*Garochana;* Singh.—*Visaghul;* Tam.—*Visha kallu, Pamu kallu;* Tel.—*Geruda-petsa-rai.*

Characters.—A variety of soapstone. Occurs in very irregular and angular pieces, of light yellow colour, of various shapes and sizes. Resembles pieces of marble or tamarind stone. The surface is generally rough. Taste astringent. Smell resembles that of pipe-clay. Dose—1 to 2 grs.

Actions and uses.—It is used in native practice as a nervine tonic, deobstruent and astringent, given in obstinate vomiting, in diarrhœa in children, and in profuse or troublesome and painful menstruation. With Terminalia chebula its paste is applied to the mouth of children in stomatitis.

Ochre.—An earthy mixture of alumina silica, impure sesquioxides of iron and other mineral substances.

Habitat.—Punjab bazars. South of India.

Vernacular.—Arab.—*Maghrahu;* Eng.—*Red bole, Yellow ochre, Reddle or Red chalk, Red earth;* Guz.—*Hiringi pewdee, Geru mati;* Hind.—*Geru mati, Geru peodee;* Mah:—*Geru;* Pers.—*Gile surkh;* Sans.—*Gairika, Rakta-pashan;* Tel. or Tam.—*Sona geru.*

It is generally used by goldsmiths. It is dearer in price than, and superior in quality to, the Geru mati.

Under the generic name of ochre, several earthy mixtures of alumina, silica, calcareous and argillacious earth and oxide of iron are used. They are distinguished from one another by difference of colour, which depends upon the proportion of oxide of iron present. It may be yellow or brown, sometimes red.

Characters.—Ochre is a clay found in lead and iron ore, and contains more oxide of iron than any other clay.

There are two varieties—bole (yellow) and red ochre. The bole is of a yellow or brown colour and seldom used in medicine. It may be changed into red by calcination. Red ochre or red chalk is of a blood or deep-red colour. It sometimes occurs in powder and sometimes as hard and red laminated pieces. It has an earthy texture, and stains the fingers when handled. It very rapidly absorbs water. The taste is earthy, slightly astringent, and somewhat mucilaginous. Used as a dusting powder.

Actions and uses.—Astringent and cooling. Used as a local application for burns, scalds, foul ulcers, boils, pustular and herpetic eruptions, and aphthous sores about the mouth.

Gil-i-Makhtum.—A deep red or white or variegated coloured soft and irregular piece, consisting chiefly of white carbonate of lime and peroxide of iron.

Actions and uses.—Styptic and desiccant. Used for dusting abraded surfaces.

Bole Armenian—Bolus armeniacus.—It is composed of silicate of alumina, magnesia and oxide of iron.

Vernacular.—Arab.—*Tene aramani, Hajr armeni;* Eng.—*Berlin red*; Hind.—*Gil-e-armani, Gheru mitti;* Mar.—*Phula-geru;* Pers.—*Gil-armeni;* Java—*Tannam poo;* Punj.—*Harmasi;* Sans.—*Guru kallu;* Tam.—*Sime kavi kallu;* Tel.—*Tima kavirai*

Characters.—It is an argillaceous or calcareous mineral, one of the hydrous silicates of alumina, met with artificially made into small cakes and stamped with certain impressions. It is a red, rough, brittle earth, occurring in laminated masses or irregular pieces of a reddish-brown or variegated colour. It is soft and somewhat heavy. On

section it is found to be granular and sprinkled with white particles. The cut portion resembles a piece of rhubarb; when exposed to the air, it absorbs moisture very rapidly. If thrown into water, it readily crumbles; when put into the mouth, it sticks firmly to the tongue. Used as a powder or paste. Dose—5 to 30 grs.

Actions and uses.—Refrigerant, astringent, absorbent. Internally the powder with cream is given in advanced cases of dysentery. Pregnant women eat this and other unctuous earths to allay craving for food. A paste of it is used as an application to inflamed and swollen glands; also to ulcers and raw surfaces.

Gil-i-Abrorshi—Gil-e-Far.—Hasan dhup (Ind. Bazar) Gil. Pers. —Earth, Clay. Composed of silicate of aluminium lime and oxide of iron. A kind of clay found in the deposit from mineral springs containing sulphur. A rough, hard, but not brittle earth, made into cakes of a yellow or pink colour. The surface when touched adheres to the fingers as a yellow powder. In smell it resembles Multâni mâti. Its taste is somewhat astringent.

Hasan dhup is a mere imitation—an earthy clay mixed with ground sulphur and made into cakes. It is also called Moses' stone from its lamellar structure.

Actions and uses.—Astringent, desiccant. Similar to Multâni mâti. The paste is applied to the head in headache and to the nose in epistaxis.

Gil-i-Multani.—It is composed of aluminium silicate, with a trace of iron.

Vernacular.—Bomb.—*Multâni mâti;* Duk.—*Mith-gachni;* Eng. Fuller's Earth; Hind.—*Gil-i-multâni;* Pers.—*Gil;* Sind.—*Meta;* Tam. or Tel.—*Gôpe.*

Characters.—Soft, saponaceous earth, occurring in pieces of porous clay, of a light greenish-brown colour, sprinkled with yellow. Each piece consists of a number of flat stratified layers. Its smell resembles that of Geru mâti. Taste very mucilaginous and astringent. It readily absorbs water, and becomes converted into a gritty powder.

Actions and uses.—Refrigerant, astringent and deobstruent. The paste is applied to the forehead in headache and to the nose in epistaxis. As a deobstruent it is applied to inflammatory swellings and swollen glands.

Boron.—This element resembles carbon. It occurs chiefly as boric or boracic acid or as borax.

Manufacture.—Heat together double fluoride of boron and potassium and metallic potassium in an iron vessel, wash out the soluble salts with water, and evaporate.

Characters.—A dull, greenish-brown powder. On burning, it absorbs oxygen from the air, producing boric oxide which, when united with water, forms boric acid. Boric oxide combines with metallic oxides, and forms metallic borates.

HALOGENS—HALOIDS.

Halogen, meaning produced from the sea, in allusion to their original source. The elements chlorine, bromine, iodine and flourine are called halogens, their original source being the ocean. Chlorine from sea salt, iodine from sea-weed, bromine from sea-water. They all have allied properties and affinity for hydrogen.

CHLORINE.

Chlorine, so called in allusion to the light green colour of the gas. It exists abundantly in the inorganic kingdom. It is also found in both the animal and vegetable products ; with metallic bases it forms chlorine compounds, *e.g.*, chlorates of potassium and sodium, chlorides of ammonium, calcium, potassium, sodium, mercury, iron, gold, zinc, &c.

To obtain it, mix manganese dioxide with hydrochloric acid and water, and apply gentle heat. At an ordinary temperature it is a greenish-yellow gas, of a peculiar, acrid, suffocating odour and astringent taste ; very soluble in water. It bleaches all vegetable colours.

Gargarisma chlori—Chlorine gargle.—Contains free chlorine. It is prepared by mixing chlorate of sodium 10 grs., hydrochloric acid 30 ms. To the gas add distilled water to make a pint, used as a detergent and to remove follicular patches.

Liquor Chlori—Aqua chlori—Chlorine water. To obtain it, heat manganese dioxide 10 and hydrochloric acid 35, then saturate water 400 with the gas so obtained or pass chlorine gas into water. It should contain 2·66 gas of chlorine in one ounce. Sp. Gr. 1·003.

Characters.—A clear, greenish-yellow liquid, of suffocating odour and disagreeable taste. Decolorizes litmus. Dose—10 to 20 ms., well diluted. Used as a lotion or spray.

Chlorinated lime—(*See* Calx Chlorinata.)

Solution of chlorinated soda—(*See* Liquor Sodæ Chlorinatæ.)

Physiological actions.—Chlorine in the presence of moisture is antiseptic, disinfectant and deodorizer. Its chief value depends upon its

disinfecting property. It has great affinity for hydrogen. It acts upon various specific germs; it decomposes all bodies containing hydrogen as a molecular constituent, and forms hydrochloric acid. It also sets free oxygen in the form of ozone. When taken into the stomach, it is converted into hydrochloric acid and chlorides. Locally it is an irritant and vesicant to the skin and mucous membranes. If inhaled, it irritates the nose, fauces, and produces cough, spasm of the glottis, and even inflammation of the respiratory passages and lungs. Chlorine water is a local stimulant, antiseptic, and disinfectant. As an inhalation it is given in various specific fevers, tuberculosis, phthisis, and chronic bronchitis. Locally a strong solution of chlorinated soda is a good application to bites of venomous serpents and insects. Diluted chlorine water is used locally to promote healing of sloughing ulcers, gangrenous wounds, aphthæ, &c. As a wash for the hand after contact with infectious diseases it is of great benefit. Internally as an antiseptic it is given in diphtheria. It is used as a gargle in unhealthy conditions of the mucous membranes of the mouth, larynx and pharynx. Vapour chlori is used to disinfect sick rooms, drains, and discharges from the body.

Acidum Hydrochloricum, B.P.—Hydrochloric acid, muriatic acid.

Manufacture.—Add sodium chloride to sulphuric acid and apply heat. Hydrochloric acid gas will be evolved. Dissolve this gas in cold water. It contains 31·79 per cent. by weight of pure acid gas (hydrogen chloride) and 68·21 of water.

Characters.—It is a clear, suffocating, fuming liquid, of an intensely acid reaction, of a pungent odour and acid taste. Sp. Gr. 1·160. It forms salts.

Preparations.—Acidum Hydrochloricum Dilutum, B. P. Diluted Hydrochloric acid.—Contains 10·58 per cent. by weight of hydrogen chloride. Dose—5 to 20 ms.

Acidum Nitro Hydrochloricum—(*See* Nitric Acid.)

Physiological action.—A powerful, highly diffusible caustic, escharotic and corrosive. It destroys lower organisms. It absorbs or abstracts the water of the tissues and coagulates albumen. In a diluted form it is antifermentative, antialkaline, astringent, tonic and refrigerant. It acts injuriously when in contact with the teeth. It stimulates the parotid and maxillary glands and promotes the flow of saliva. In the stomach it lessens the acid secretion. In the intestines it excites the intestinal alkaline gland secretions, also secretion of bile, &c. Locally as an escharotic it is applied to phagedenic and gangrenous

ulcers, to cancrum oris and warts. Diluted hydrochloric acid as a refrigerant quenches thirst in typhoid and continued fevers. As a tonic it is given before meals in atonic dyspepsia dependent upon the deficient secretion of the gastric juice. In syphilis and chronic stage of whooping cough and in phthisis it is beneficial. As a stimulant adjunct to gargles it is used in affections of the throat and fauces.

IODUM, B.P.

Iodine.—A non-metallic element, existing in nature as salts in combination with potassium, sodium, magnesium and various other metals. It is found in sea-weed, sea-water, in several mineral waters, in fresh-water plants, in sponge, corals, and molluscus animals as oysters, also in eggs, cod-liver oil, rock salt and several ores. On the Himalaya it is found in a species of laminaria and known as goitre leaf or *Gular-kā patt* (Hind.).

A solid element obtained from mineral iodies and iodates, also from petrified ashes of sea-weeds, otherwise known as kelp. To the kelp, add water to dissolve soluble salts, filter and evaporate whereby less soluble alkaline chlorides, sulphates and carbonates are separated and crystallized. The remaining solution contains the iodidide of sodium and iodide of magnesium. This is next treated with binoxide of manganese and sulphuric acid, when iodine is set free.

Characters.—It occurs in scales or rhombic prisms, of a dark brown or bluish black colour, of metallic lustre, very disagreeable and irritating odour, acrid taste and neutral reaction. It is highly volatile and readily yields a violet-coloured vapour. It stains the skin, and readily penetrates animal tissues. It is freely soluble in bisulphide of carbon, chloroform, rectified spirit (1 in 10), and ether, slightly so in water (1 in 5000), but readily soluble in water containing solution of potassium, iodide or sodium chloride. The solution becomes deep blue with starch. Dose—$\frac{1}{8}$ to $\frac{1}{4}$ gr.

The stain may be removed by ammonia, by alkaline sulphites, bisulphites, hyposulphites, or by sodium sulphhydrate, also by alkalies or alkaline salts.

Preparations of Iodine—

Collodium Iodi (1 to 15).—When locally applied it protects the parts and prevents volatilizations of iodine.

Glycerinum Iodi—Iodine 1, Glycerin 50. Used as pigment.

Iodized Wool.—Saturate absorbent wool 94, with iodine 6, dissolved in ether 200, and dry.

Iodized Oil.—Oleum Iodi (1 in 20). A preparation which is readily absorbed, does not stain the skin or cause any irritation. Applied locally in rheumatism, to sprains, enlarged glands, and to the chest in bronchitis.

Injectio Iodi Hypodermica Fortissima.—Iodine 360 grs., potassium iodide 360 grs., water 4½ drs.; should measure 1 oz. and contains ¾ gr. of iodine in each minim. Dose—3 to 5 minims for fibrous bronchocele.

Iodo Glycerin Solution (1 in 50), **Morton's fluid.**—Iodine 10 grs., potassium iodide 30 grs., water 25 ms. and glycerine to 1 ounce, used as injection, into the tumour in cases of spina bifida. Dose—30 ms.

Iodo Salicylic Acid, and **Di Iodo Salicylic Acid.**—(*See* Iodosalicylic Acid.)

Liquor Iodi Fortis, B.P.—Strong solution of iodine. Linimentum Iodi, contains iodine 5, iodide of potassium 3, distilled water 5 and alcohol 36.

Liquor Iodi.—Solution of iodine, Lugol's solution. Iodine 2, potassium iodide 3, water to 40. Dose 1 to 10 ms. well diluted.

Pigmentum Iodi et Olei Picis.—Pigmentum Picis cum Iodo; Coster's paste, contains iodine 120 grs., oil of wood tar (oleum picis) 1 ounce. This is a chemical combination free from the irritating properties of free iodine. May also be prepared from creosote, but the resulting compounds are more irritating. The paste is used for ringworm of the scalp.

Tinctura Iodi, B.P.—Tincture of iodine; contains iodine ½, potassium iodide ½, water ½ and alcohol to make 20. Dose—2 to 5 ms. For local application, injection into cavities, &c.

Tinctura Iodi Ætherea.—Same as tinctura iodi, but made with ether.

Tinctura Iodi Decolorata.—In this the colour is removed by means of liquor ammoniæ fortis. The strength is the same as of tinctura iodi. It is more suited for exposed surfaces.

Tinctura Iodi Oleosa.—Iodine 1, rectified spirit 9, castor oil 2. Mix. Does not crack the skin. Used as inunction in enlarged glands.

Unguentum Iodi, B.P.—Ointment of Iodine (4 per cent.), contains iodine 1, potassium iodide 1, glycerine 3, lard 20.

Iodized Starch.—Amyli iodidum—*See* Amyl iodide.

Pasta Iodi et Amyli—Starch 1, glycerin 2, water 6, solution of iodine 1. Mix. For foul syphilitic sores. It rapidly heals syphilitic ulcers of the face.

Vapour Iodi Ætherealis.—Contains iodine, ether, creosote or thymol, carbolic acid and rectified spirit, Used for respirators.

Carbolised iodine solution contains iodine 0·3 grs., carbolic acid 2·2 grs. and water 1 ounce. Used as a gargle, inhalation or paint in diphtheria, as injection into the uterus and as a douche in ozœna; has been given internally for Asiatic cholera. Dose—10 ms.

Iodised Phenol—Carbolated Iodine (1 to 4).—Locally for intra-uterine injection and application to the ringworm of the scalp.

Papier Iodogen—A French preparation. A paper impregated with iodate and iodide of potassium and tartaric acid. For local application.

Pigmentum Iodi—Iodine 2, iodide of potassium 1, glycerine 4. Used to destroy vegetable parasites.

Physiological action.—Disinfectant, antiseptic, anti-malarial, counter-irritant, rubefacient, and corrosive. It is an irritant of the skin and the mucous membranes. It imparts to the skin a brown stain. It combines with the albumen of the tissues, sets up irritation and severe pain, with exfoliation of the epidermis. In large doses it leads to vesication. The vapour, when inhaled, irritates the nose, fauces and the respiratory passages, giving rise to cough, sneezing and dyspnœa. As a disinfectant it destroys low organisms, unites with their hydrogen, and thus breaks up noxious compounds. Iodine salts are easily diffusible. They are soon decomposed, setting free iodine which is eliminated with the urine, sweat, breath, &c.

Internally in small doses it is alterative, antiseptic and a stimulant of the skin, mucous membrane, and the secreting and excreting organs and of the lymphatic system. In large doses its salts irritate the mucous membrane of the alimentary canal, leading to ptyalism, saline taste in the mouth, fœted breath, swelled gums, coryza, sore throat, redness of the eyes, profuse mucous discharges, headache, scalding in the urine, temporary impotence, pain over the brow, acne eruptions on the face and hands. When long continued they produce iodism. The symptoms are, great waste and elimination of waste products leading to progressive anæmia, emaciation and mental depression.

Therapeutics.—As an alterative it stands next to mercury. In asthma large doses give perhaps the best results. As a stimulant of the lymphatic system it removes normal or abnormal deposits or fluids, and causes their absorption. As an alterative it improves the nutrition and reduces inflammatory processes; it has a specific action on syphilis, especially in the second or third stage, and it is given with benefit in scrofula, tuberculosis, bronchocele and in a lesser degree in chronic inflammations, in chronic rheumatism, gout, in chronic enlargement of the liver, spleen, uterus or ovaries. In certain forms of neuralgia, and in malarial fever, iodine, combined with carbolic acid, succeeds where quinine, cinchonidin and other antiperiodics have failed. As a gastric sedative, it is given in various forms of vomiting, as in vomiting of phthisis, pregnancy, alcoholism and that due to gastric ulcer, chlorosis, &c. It is successfully given in dropsies, chronic suppurating glands, and in later stages of pneumonia, pleurisy, peritonitis, hepatitis, &c. In chronic skin diseases as lichen, urticaria, and lupus where itching is intolerable it is given internally with benefit. Externally as a stimulant and antiseptic ointment, it is locally used in enlarged liver or spleen. As a counter-irritant its tincture or ointment is applied to cause absorption of various morbid fluids. Insufflation of iodine with tannin and starch is used in sores, ulcers, wounds, glandular tumours and chronic hypertrophied tonsils. In ovarian cysts, empyema, abscesses, cavities and in fistula it is injected with success. It is applied to the abdomen in ascites and in erysipelas. Locally the tincture is painted over spongy gums and to remove tartar from the teeth. As an inhalation its vapour is recommended in acute catarrh, hay fever, also in laryngeal and pharyngeal affections, in chronic pulmonary and bronchial affections and in phthisis. In dropsical affections as hydrocephalus, hydrothorax, &c., it is given internally or applied locally.

Acidum Hydr-iodicum. Syn.—Hydr-iodic Acid.

Manufacture.—Mix potassium iodide and potassium hypophosphite in water, add tartaric acid. To this add alcohol, shake, filter and evaporate over a water bath.

Preparation.—Syrupus acidi hydr-iodici contains 1 per cent. of absolute hydr-iodic acid, a mild preparation of iodine liable to change by exposure to air, when free iodine is formed. Dose—20 to 60 ms.

Actions and uses.—A substitute for iodine and for the iodides. It is an alterative, antiseptic and absorbent, less offensive to the taste and stomach. It is indicated in asthma, chronic bronchitis, pulmonary catarrh, goitre, &c.

Iodi Terchloridi, Terchloride of Iodine.

Manufacture.—Produced by treating iodine at a gentle heat with chlorine in excess. It crystallises in orange-yellow needles.

Characters.—Melts at 20° to 25°, giving off chlorine which it reabsorbs on cooling.

Liquor Iodi Terchloridi (1 in 20). Dose—2 to 5 minims in an ounce of water every two hours.

Actions and uses.—It has been claimed for it that it can be used in all diseases caused by germs and their products,—ptomaines and toxines or organic poisons of a similar nature—particularly in all fevers, such as malarial, typhus, typhoid and bubonic plague and in disorder of the stomach arising from gastric fermentation and in diarrhœa, dysentery and cholera; also as an alterative in phthisis and syphilis.

Alkalies and alkaloids should not be combined with it in the mixture; but caffeine, digitalis, &c., may be administered alternately.

It is also used in half to one drachm doses diluted to two to four pints as an enema for flushing the intestinal canal under the belief that it destroys all germs and poisons accumulated therein. It is being extensively tried in plague, malarial and other fevers in Bombay.

Unguentum Iodi Terchloridi—5 grs. in an ounce. For external application for skin affections.

BROMINE.

A liquid, non-metallic element. Bromine is never met with in a free state. It is found in both kingdoms in nature, in sea-water and in brine springs in combination with sodium, magnesium or calcium. It is also found in sea plants and in kelp. In combination with metals it forms various compounds or salts.

Manufacture.—Pass chlorine gas into bittern which is the mother liquor left after the crystallization of common salt in salt pans, and shake with ether when magnesium bromide of the bittern is converted into chloride of magnesium, and bromine is separated; or concentrate the bittern and add sulphuric acid and manganese dioxide.

Characters.—A brownish-red mobile liquid, highly volatile and evolving highly irritating yellowish red vapour; the odour is suffocating, and resembles that of chlorine. It is a powerful bleaching agent, soluble in alcohol, ether and chloroform; also in 30 parts of water and in carbon bisulphide. It becomes yellow with starch solution.

Physiological action.—Locally a powerful escharotic, very irritating and painful, also deodorant and antiseptic. If inhaled, it irritates the nose and leads to cough and dyspnœa. Its vapour irritates the eyes.

Internally it is a violent irritant poison; it irritates the stomach. Bromine salts depress the heart, respiration, and cerebral and spinal centres. They are very diffusible, decompose in the blood, and are eliminated by the skin, kidneys, bronchi, intestines and fauces. If long continued they have a sedative action on the sympathetic system. They lower the arterial tension, also cause anæmia of the brain, spinal cord, skin and of the sexual organs, causing somnolence, anæsthesia of the skin and mucous membranes, emaciation, acne, cold extremities, fœtid breath, and want of co-ordination. In some cases they lead to mental depression causing hallucinations, melancholia, with tendency to suicide. In medicinal doses they are sedative, hypnotic and antispasmodic. They produce sleep, lessen sexual excitement, and soothe the mental irritability. Previous and prolonged use of opium or morphine renders the use of bromides more effective in smaller doses.

Therapeutic uses.—The vapour of bromine in hot water is inhaled in coryza, hay asthma, diphtheria, and membranous croup. Bromine is employed for destroying the fœtid smell of uterine cancer, chancres and hospital gangrene. Its solution is applied locally, or 5 to 6 ms. injected into the tissues in epithelial cancer of the cervix uteri. It may be given internally in membranous croup and diphtheria.

Acidum Hydrobromicum.—Pure hydrobromic acid is a colourless gas of a pungent irritating odour, producing dense white fumes.

Acidum Hydrobromicum Dilutum, B.P. Diluted Hydrobromic Acid.—Distil together potassium bromide and concentrated phosphoric acid; or add tartaric acid solution to the solution of bromide of potassium. It contains 10 per cent. by weight of hydrogen bromide. 6 minims is equal to one grain of potassium bromide. It is a clear, colourless liquid, slightly volatile, without any odour, and strong acid taste. Dose—15 to 60 ms.

Physiological action.—Diluted hydrobromic acid is a vascular and nervine sedative. In small doses alterative, diuretic, stimulant and tonic like other mineral acids. Its action, however, on the nervous system and circulation is like that of the bromides, but without the depressing effects of potassium. It acts chiefly on the lymphatic system.

Therapeutic uses.—It is given in scrofula, erysipelas, chronic skin diseases. In epilepsy a drachm dose is given with benefit. In tonsillitis, aneurism, whooping cough, in neuralgia, and insomnia it is of great benefit. It is a good solvent of quinine, and is preferred to other acids, under the belief that thus combined quinism is prevented.

and the head symptoms are less frequent. Like iodine it is a deodorizer and disinfectant. In palpitation of the heart with general nervous excitability, in hysteria, and in vomiting of pregnancy it is equally useful.

Fluorine.—A gaseous element of the odour of chlorine gas. It has great affinity for metals and chiefly for silicium. As fluorspar or calcium fluoride it exists in nature in considerable quantities.

Acidum Hydrofluoricum Purum—Pure Hydrofluoric, Fluorhydric or Fluoric Acid (Hydrogen Fluoride).

Heat calcium fluoride (fluorspar) with concentrated sulphuric acid, when a volatile colourless liquid emitting suffocating fumes is obtained. This is re-distilled for medicinal purposes. A colourless transparent mobile liquid, fuming densely at ordinary temperature, absorbing water very greedily from the air. It is an aqueous solution, containing about 30 per cent. of Hydrofluoric acid gas.

Preparation.—Acidum fluoricum dilutum, containing ½ per cent. of the acid. Dose—10 to 30 ms. Used as solution, ½ per cent. as inhalation.

Actions and uses.—Fluoric acid is a powerful escharotic, affects deep tissues, and causes a dry or painful slough. As an alterative the dilute acid is given in bronchocele or goitre. The air passing through a mixture of 1 of hydrofluoric acid and 3 of water is inhaled in laryngeal diphtheria and in phthisis.

Ammonii fluoridum.—Recommended for hypertrophy of the spleen. Administered in solution. Dose—$\frac{1}{24}$ to ½ gr.

Ferri fluoridum.—Ferrous fluoride, a purplish insoluble powder. Dose—$\frac{1}{24}$ to ½ gr.

Quininæ fluoridum.—Dose—$\frac{1}{24}$ to ½ gr.

METALS.

These are divided into *light* and *heavy* metals. *Light* metals include (1) Alkalies, (2) Alkaline Earths, and (3) Earths.

Alkali.—Found in Southern India, which is particularly rich in alkaline and earthy minerals. Hind.—*Khâr.*

POTASSIUM.—KALIUM.

Potassium from Pot and ash—salts evaporated in pots from wood ash.

Potassium—the metallic base of potassa or potash. It never occurs in nature in its free state, but is found extensively as carbonate in wood ashes remaining after the combustion of plants or trees.

It is an important constituent of plants and animals. In rocks, felspar and granite it exists as double silicate. Plants derive potassium salts from disintegrated rocks, chiefly the silicate. From the rocks it is absorbed by the rain, percolates through the soil, and is taken up by the roots. From the wood it is prepared by incineration. It is found in the native wood as acetate, but is also found in the plants as chloride, citrate, sulphate, tartrate, &c. On incineration, these are converted into carbonate. As potassium bitartrate it is found in argol deposited during the fermentation of wine.

Characters.—A brilliant white metal, soft, and could easily be cut with a knife. Exposed to the air it oxidises and becomes covered with a crust of caustic potash. Thrown upon water it burns with a purple or violet flame, yielding alkaline solution.

Potassii Acetas, B. P.—Potassium Acetate. Syn.—Sal diureticus. Obtained by fusing the product of the interaction of acetic acid and potassium carbonate.

Characters.—A white satiny powder or crystalline mass, very deliquescent, without any odour, of a saline taste and of a faintly alkaline reaction, soluble in water (2 to 1) and in alcohol (1 in 2). Dose—10 to 60 grs.

Actions and uses.—An organic acid salt converted in the stomach into carbonate. Potassium acetate is a mild alterative, diuretic, and aperient in large doses. As a diuretic it is given in dropsies, in diseases of the liver and spleen, and in acute jaundice and fever. Also given in rheumatism, chronic skin diseases, in gonorrhœa, and in glandular enlargements.

Potassii Benzoas, Potassium Benzoate.

Add benzoic acid to a hot Potassium carbonate solution and evaporate. A crystalline powder of a faint benzoic odour and slightly astringent taste, freely soluble in water. Dose—15 to 20 grs.

Actions and uses.—Lithontriptic. Given in cystitis with lithic acid diathesis. Other actions and uses are similar to those of sodium benzoate.

Potassii Bichromas, B.P. Syn.—Potassium Bichromate—Red chromate of potassium. Potassium dichromate. Add chrome-iron-ore, potassium carbonate and lime, apply heat, and roast; when cool, make a fine powder. It occurs as orange red prisms, without any odour and of a bitter disagreeable metallic taste, soluble in cold water (1 in 10), in boiling water (1 in 7), and insoluble in alcohol. It

coagulates albumen. Dose—$\frac{1}{10}$ to $\frac{1}{8}$ grain; used as pill; as aqueous solution 5 per cent.

Preparation.—Acidum Chromicum, B.P.—Chromic Acid, Chromic Trioxide, Chromic Anhydride.

Actions and uses.—It is an antiseptic, milder escharotic than chromic acid. Internally it is an alterative and astringent. *Therapeutics.*—Used as a caustic in polypi, warts and other excrescences, syphilitic nodules, sores, &c. For sweating of the feet a solution of it is used with benefit. In polypi of the nose, snuff composed of bichromate of potash with sugar of milk (1 to 9) is beneficial. In ulcerated sore throat and in enlarged tonsils a gargle of the bichromate (1 in 250) and in catarrh of the nose and vagina a solution of 1 in 500 is used. Internally it is given in locomotor ataxia, dyspepsia, chronic gastric ulcers, chronic intestinal catarrh and secondary syphilis; also given in scrofulous eczema, in marasmus, in chronic diseases of the liver, kidneys, skin and bones and of the bronchial mucous membranes.

Potassii Cantharidas.—Dissolve crystallized cantharidine and potassium hydrate in distilled water, and evaporate. Occurs as fine crystals or white amorphous powder, soluble in water, used as solution (1 in 1700). Dose—$\frac{1}{320}$ to $\frac{1}{160}$ of a grain, or of the solution 3 to 6 ms. hypodermically.

Actions and uses.—Anti-tubercular. A remedy for the treatment of tuberculosis.

Potassii Bromidum, B.P.—Potassium Bromide.—Add a slight excess of bromine to a strong solution of potassium hydroxide, the solution of potassium bromide and bromate is formed. Evaporate to dryness. Fuse with charcoal to decompose the bromate; purify and crystallize. Occurs as colourless or white cubical crystals or granules without any odour, and of a pungent saline taste, soluble in water (1 in 2) and alcohol (1 in 200). Contains 60 per cent. of bromine. Dose—As an alterative, 5 to 20 grs.; as a soporific, 15 to 40 grs.

Physiological action.—A powerful nervine and respiratory sedative, cardiac depressant and muscular paralyzant. It is also alterative, resolvent and antispasmodic. It is slowly eliminated by the kidneys. It is a local stimulant, causing contraction of the blood vessels. It is a powerful sedative of the sexual system and of the mucous membranes of the bladder, larynx, pharynx and stomach. *Therapeutic uses.*—In a concentrated form its solution is locally applied to check epistaxis and uterine hæmorrhages; also used as an injection

in coryza. In all irritative diseases of the generative system, dependent upon or connected with undue sexual excitement, potassium bromide or the ammonium bromide is extensively used, as in nymphomania, priapism, chordee, spermatorrhœa, and in epilepsy; as a nervine sedative it is given in colic, migraine, nightmare, delirium tremens, and in skin diseases : used in all forms of insomnia due to worry or mental overwork. Also given in tremors during and after low conditions in fevers and in other exhausting diseases as metrorrhagia or menorrhagia and in sub-involution of the uterus; as a local sedative of the mucous membranes it is used in cystitis, gastric vomiting, whooping cough, asthma, &c. In a concentrated form it acts as a local anæsthetic, and before the use of cocaine it was used in irritation of the throat and for laryngoscopic examination. It has been tried with some success in diabetes. Occasional purgative and the use of arsenic is sometimes necessary to avoid acne.

Potassii Carbonas Impura.—Impure Potassium Carbonate.

Vernacular: Eng.—*Salt of Tartar, Pearl Ash, Potashes;* Can.—*Marada-uppoo;* Duk.—*Jhâr-ka-namak;* Guz.—*Pâpad khar, kharo;* Hind.—*Jawkshara, Khar;* Malyal.—*Kâram, Pappatak mora uppa;* Mar.—*Jhadicha mitha;* Sans.—*Daru lavanum;* Tam.—*Mara vuppu, shambal vuppu;* Tel.—*Manu-vuppu, Budide-vuppu;* Chin.—*Shin-kien, Hwui-kien.*

Papad khâr. Khârâ or kharo means "saltish" papadio as contained in papad, it being a constant ingredient in the preparation of papad, a kind of thin and circular cake or bread made of mung (*Phaseolus mungo*) or urada flour, to which asafetida, impure salt of tartar, and other carminatives are added.

Manufacture.—Subject to direct flame or to evaporation the lye of wood ashes. Another method—incinerate the leaves of plantain or the wood of *Achyranthes aspira,* when the combustible impurities are burnt out, leaving bluish white ashes. To this add water and percolate. The percolated fluid contains potassium carbonate with a little potassium and sodium chloride and sulphate in solution. It occurs in crystals or as irregular coral-like masses, or small dirty-looking pieces resembling manna. The smell faintly resembles that of powdered tobacco. The taste is alkaline and somewhat sweetish. Dose—5 to 20 grs.

Actions and uses.—Antacid, carminative, given in dyspepsia, acidity of the stomach, &c.

Potassii Carbonas, B.P.—Potassium Carbonate.

Salt of tartar. It is associated with either one or two molecules of water. To obtain it, lixiviate wood ashes; the resulting product is purified pearl-ash; make a solution of it with its own weight of water and evaporate? Also obtained by the interaction of crude potassium sulphate, crude calcium carbonate and carbon. Occurs as small white crystals, very deliquescent, of an alkaline caustic taste, alkaline reaction, soluble in water (1 in 1), insoluble in spirit. It is slightly caustic. Dose—5 to 20 grs.

Preparations.—Mistura ferri composita. Dose—1 to 2 ozs.

Liquor Arsenicalis, Liquor Potassæ Arsenitis, Fowler's solution. Contains arsenious acid 1 per cent. Dose—2 to 8 ms.

Actions and uses.—It is seldom given internally except when greatly diluted, being an irritant. Generally used as a solution (1 to 8) in pruritus vulva, fœtid perspiration of feet, axilla, &c.; (1 in 16) in freckles, sunburn, itching of urticaria, acne, and herpes depending upon dyspepsia.

Potassii Bicarbonas, B.P.—Potassium Hydrogen Carbonate—Potassium Bicarbonate—Acid Carbonate of Potassium.

Pass carbon anhydride or carbon dioxide into a strong aqueous solution of potassium carbonate to saturation. The precipitate will be potassium bicarbonate. Occurs as colourless rhombic prisms, not deliquescent. It has no odour, but an extremely biting saline or feebly alkaline taste, alkaline reaction, not corrosive, decomposed by boiling water, soluble in water (1 in 4), and almost insoluble in spirit. Dose—5 to 30 grs. 20 parts of potassium bicarbonate are neutralized by 14 parts of citric acid or by 15 parts of tartaric acid.

Liquor Potassæ, B.P.—Solution of potash.—Brandish's alkaline solution. Add slaked lime on a boiling solution of potassium bicarbonate (1 in 10), and strain. It contains 27 grains of potassium hydroxide in one fluid ounce. It is also prepared from pearl ash, wood ash and quicklime. A clear, watery, saponaceous fluid, highly alkaline, without any odour, and mild acrid taste, alkaline reaction, corrodes both animal and vegetable textures. Dose—10 to 30 ms. well diluted.

Potassa Caustica, B.P.—Potassium Hydrate, Potassium Hydroxide, Potassa. Caustic Potash.—Prepared by the interaction of potassium carbonate and calcium hydroxide, or evaporate liquor potassæ until the residue has the consistence of oil, and pour into moulds.

Caustic potash occurs in hard, white, deliquescent pencils, or as translucent crystalline cakes, without any odour, and of acrid caustic taste and alkaline reaction. It contains not more than 10 per cent. of water and impurities combined. It quickly destroys organic tissues with which it may be brought into contact. Soluble in water (2 to 1) and alcohol (1 to 2).

Potassa cum calce—Vienna paste.—It consists of potassium hydrate with quicklime. To obtain it, rub together equal parts of caustic potash and quicklime in an iron mortar, and mould into pencils. Occurs as grayish white deliquescent powder—a milder caustic than potassa fusa.

Actions and uses.—The bicarbonate is given in dyspepsia, in cystitis, with highly acid urine, and in tuberculous, scrofulous and other enlarged secreting glands. It causes absorption of the inflammatory products as in pneumonia, pleurisy, &c. As a sedative of the mucous membranes it is largely used in bronchitis, whooping cough, &c. It is a valuable diuretic in dropsies and in uric acid diathesis. In Native practice pearl ash is given in jaundice. Liquor Potassæ is a caustic, and therefore should be administered in a diluted form. In the blood it is converted into the carbonates, and as such it is eliminated in the urine. In large doses and given for a long time it impoverishes the blood and impairs digestion. Liquor Potassæ is primarily antacid, secondarily alterative and diuretic. By its antacid action it neutralizes excess of acid in the blood. It is required especially in calculous affections, in uric acid diathesis, acne, and boils. In small doses and with vegetable bitters it is given, before and after meals, in atonic dyspepsia to stimulate the gastric juice and to neutralize acids of fermentation. It is also given in gastralgia, cardialgia, acute and chronic rheumatism, obesity, &c., but for these purposes the carbonate or bicarbonate, but especially the latter, is preferred. As a diuretic it is given in irritable state of the bladder, in gonorrhœa, acid urine, dropsical affections, and in bronchial catarrh. Locally, a dilute solution is used to relieve pruritis, to remove scales as in chronic skin diseases, as lepra and psoriasis. Caustic potash and the Vienna paste.—These are escharotic and caustic. They destroy morbid or cicatricial tissues by abstracting moisture and dissolving albumen, fibrin and gelatin, saponifying the fats, and thus converting the tissues to which they are applied into a slough. The paste is used to cauterize bites of animals or stings of insects, to destroy warts, nævi, malignant pustules, and to open suspected abscesses. Their action is not superficial like that of silver nitrate, but they penetrate the deeper tissues, as in ingrowing of the

nail tissues. Taken internally it is a corrosive poison, destroying the mucous membrane of the gastro-intestinal tract, giving rise to intense pain, diarrhœa, delirium, convulsions, and death from stricture of the œsophagus, œdema of the glottis, &c.

Potassii Chloras, B.P. Syn.—Potassium Chlorate.

Pass chlorine gas into water holding lime or magnesia in suspension. Treat the liquid with potassium chloride and crystallize. Another method.—Pass chlorine gas into a saturated mixture of potassium carbonate and slaked lime, and crystallize. Occurs as colourless lustrous rhomboidal prisms or a fine white powder without any odour, and of a cool saline taste, of neutral reaction, sparingly soluble in cold water (1 in 16), in boiling water (1 in 3) and insoluble in absolute alcohol. It causes explosions if triturated with metallic sulphur and should not also be mixed with antimonial sulphide, phosphorus, with organic matters as tannic acid, cork, sugar and with vegetable and oxidizable substances, as catechu and glycerin. Dose—5 to 15 grs.

Preparations.—Trochiscus Potassii Chloratis, B.P. Potassium chlorate lozenges 3 grs. in each. Gargarisma Potassii Chloratis—Potassium Chlorate gargle—contains potassium chlorate 1, glycerine 4, and water 50.

Physiological action.—Locally deodorizer and detergent. Internally it passes unchanged through the kidneys. Like nitre it is refrigerant, diuretic and alterative. It is a stimulant of the general system and of the mucous membranes. It increases the activity of the heart and exhilarates the brain, and acts as tonic. *Therapeutic uses.*—It is a common ingredient in stimulant and tonic mixtures. In palpitation of the heart it is given with iron and digitalis. It has been used in low forms of fevers, such as typhoid, typhus, scarlatina, and in other low states of the system; in catarrh of the nose and larynx, in phthisis, croup and diphtheria, in tabes messenterica, and in chronic diarrhœa. In children it is given by the mouth or by enema. In eruptive fevers it brings about an abundant crop of eruptions. In erysipelas, combined with iron, it is very valuable. In leucorrhœa as a lotion (1 in 100) and in gonorrhœa and chronic cystitis as an injection (1 in 100) it is of benefit. In skin diseases as acne, tineas, ecthema, eczema, impetigo, cycosis, a solution (1 in 100) is applied with benefit. As a deodorizer it is used in fœtid stools, fœtid urine, and fœtid breath; a solution (1 in 20) is used in the form of a wash or gargle in stomatitis, apthæ, cancrum oris, tonsillitis, and mercurial salivation. It is an efficient application in unhealthy sores and ulcers, and a wash for sinuses and cavities.

As an insufflation the powder is used in epithelioma of the cervix. It diminishes the pain and checks the growth.

Remarks.—It should not be prescribed with potassium iodide nor with other iodine preparations. It sets free iodine, which acts as a irritant.

Potassii Citras, B.P.—Potassium Citrate.

Neutralize saturated solution of potassium carbonate with citric acid. Occurs as deliquescent white transparent prismatic crystals or granular white powder without any odour and of a cooling saline or feebly acid taste, very soluble in boiling water, slightly so in alcohol. Dose—10 to 40 grs.

Preparations.—Potassii Citras Effervescens—Effervescent Potassium Citrate. Contains potassium bicarbonate 90, acid citric 63, sugar 47. A fine white powder without any odour and of a sweet saline taste, soluble in water, with effervescence. Dose—5 to 60 grs. Liquor Potassii Citratis—Solution of Potassium Citrate—Mistura Potassii Citratis—contains 9 per cent. of anhydrous potassium citrate.

Actions and uses.—Refrigerant, antacid, and diuretic. In small doses, antiscorbutic. As a febrifuge it promotes diaphoresis. It is given with antimonial wine and sweet spirit of nitre in fevers and in acute rheumatism. In uric acid diathesis it is given with limejuice to render the urine alkaline. In the early stage of acute bronchitis it is given with benefit.

Potassii Cobalto Nitris—Potassium Cobalto Nitrite.—Greenish-yellow powder or crystals, slightly soluble in water. Dose—$\frac{1}{12}$ to $\frac{1}{2}$ gr. It relieves arterial tension. Does not cause discomfort like potassium and other nitrites. Given to relieve dyspnœa in uræmia and asthma.

Potassii Cyanidum, B.P.—Potassium Cyanide.

Heat together potassium carbonate and potassium ferro cyanide, when iron is precipitated. It occurs as deliquescent white opaque pieces or granules without any odour when dry. Fresh or moist specimen smells of hydrocyanic acid. Taste sharp and alkaline, soluble in water 1 in 2, slightly so in alcohol. Dose—$\frac{1}{12}$ to $\frac{1}{4}$ gr.

Sometimes used as solution in place of diluted hydrocyanic acid.

Actions and uses.—Sedative, anodyne and antispasmodic. Given to women in dyspeptic headache or in headache connected with menstruation. Officially it is only used for test purposes.

Acidum Hydrocyanicum Dilutum, B.P.—Diluted hydrocyanic acid. It contains 2 per cent. by weight of hydrogen cyanide. Hydrocyanic acid exists in bitter almond, prunes, laurels, kernels of peach and cherry, and in the juice of cassava, &c. To obtain it, dissolve potassium cyanide in water, add solution of tartaric acid, and remove the precipitate of cream of tartar.

Another method.—Heat a mixture of potassium ferro cyanide, sulphuric acid and water. Pass the gas evolved into water. Occurs as a colourless liquid, faintly acid, of a peculiar bitter almond-like odour and taste, slightly reddens litmus paper. Sp. gr. 0·997. Dose—2 to 6 ms.

Used as lotion (1 in 32).

Preparations.—Aqua laurocerasi, B.P.—Dose—½ to 2 drs. Tinctura chloroformi et morphinæ composita, B.P.—Dose—5 to 15 ms.

Actions and uses.—The strong acid is a most violent and rapid poison. If inhaled, it leads to asphyxia, rapid insensibility, and collapse from paralysis of the heart. In a diluted form in extremely minute doses it is a sedative and antispasmodic. Generally given in combination with other sedatives, in certain functional nervous affections as hysteria, whooping cough, asthma, neurosis of the lungs and bronchi, in functional palpitation of the heart, and in angina. Its chief use, however, is in painful affections of the stomach and in vomiting. As a lotion it is used in various forms of pruritis and other skin diseases accompanied with itching.

Potassii Ferro Cyanidum, B.P. Syn.—Potassium ferro cyanide, yellow prussiate of potash. Fuse together potassium carbonate, nitrogenous animal refuse such as dried blood, horns, skins or hoofs, and iron scraps, and then lixiviate the melted mass, evaporate, and crystallize. Occurs as efflorescent, transparent, four-sided prisms of a lemon-yellow colour, without any odour, and of a saline sweet taste, soluble in water (1 in 4), insoluble in alcohol. Employed as a test solution.

Actions and uses.—Ferro cyanide is never used medicinally. Under its use the blood collects in the heart, brain and in the arterial and venous systems. It is rapidly absorbed by the skin and the mucous membranes. It produces headache, dizziness, palpitation of the heart, constriction of the chest and cyanosis.

Potassii Hypophosphis.—Hypophosphite of Potassium.

Mix together solution of potassium carbonate and hypophosphite of lime. A double decomposition results. Filter the solution. Evaporate and granulate. Occurs as deliquescent granular white powder or as hexagonal plates or crystals, without any odour and of

a saline pungent taste, soluble in water (1 in ·06), in alcohol (1 in 7·3). Dose—1 to 5 grs.

Preparations.—1. Syrupus Hypophosphitum, Syrup of Hypophosphites. Each fluid drachm contains 2½ grains calcium hypophosphite, 1 grain potassium hypophosphite, 1 grain sodium hypophosphite, 1 minim diluted hypophosphorous acid, 25 grs. sugar, ·5 minim spirit of lemons, and water to make 1 drachm. Dose—1 to 2 drs. 2. Syrupus Hypophosphitum cum ferro, Syrup of Hypophosphite with iron. Contains ferrous lactate 1, potassium citrate 1 and syrupus hypophosphitum 100. Syrupus Hypophosphitum compositus, each 1 fluid ounce contains :—Hypophosphite of calcium 4 grs., Hypophosphite of manganese 2 grs., Hypophosphite of potassium 2 grs., Hypophosphite of quinine 1 gr., Hypophosphite of strychnine $\frac{1}{12}$ gr., Hypophospihte of iron 6 grs. Dose—½ to 1 dr.

Actions and uses.—Nervine tonic and stimulant, used in phthisis, scrofula, chronic bronchitis and cough.

Potassii Iodidum, B.P.—Potassium Iodide.

Add iodine to hot liquor potassæ till the solution has a permanent dark-brown colour. Potassium iodide and potassium iodate are formed. Evaporate the solution, heat the resulting product with charcoal, when the iodate becomes converted into iodide. It is next dissolved with boiling water and crystallized. Colourless, translucent cubes or granules of a faint iodine-like odour, pungent saline bitter taste and feeble alkaline reaction, soluble in water (4 in 3), in spirit (1 in 6), in absolute alcohol (1 in 18), and in glycerine (1 in 2·5). Dose —5 to 20 grs. Given in infusion, syrup or simple solution. Used as unguentum potassii iodidi, B.P. It contains potassium iodide 50, potassium carbonate 3, benzoated lard 400, water 47. Linimentum potassii iodidi cum sapone, B.P. It contains curd soap 2 ounces, potassii iodide 1½ ounces, glycerine 1 fluid ounce, oil of lemons 1 fluid drachm, and distilled water 10 fluid ounces. It is also a chief ingredient in the preparation of linimentum iodi, liquor iodi, tinctura iodi and unguentum iodi.

Physiological action.—Alterative, stimulant of the absorbent system, general depressant and local irritant. As an alterative it counteracts many morbid conditions, promotes absorption of morbid products, and eliminates several metallic poisons. *Therapeutic uses.*—The uses are those of iodine and potassium, but more of iodine than that of potassium. In persons susceptible to its use it gives rise to diuresis, cerebral excitement, hæmorrhages from the urethra and vagina, œdema of the tongue, glottis and laryngitis.

It is given almost as a specific in syphilis affecting bones and periosteum, in scrofulous affections, and for the absorption of effusions and morbid deposits. It is given in aneurism, the sac becomes solid by fibrinous deposits; its depressing effect on the circulation is believed to be due to the potash base. It is also given in mercurial and lead poisoning, where it acts chemically. It is given in chronic liver and spleen affections, in paralysis, in gummata, lupus, dropsy, gout, chronic rheumatism, also neuralgia, sciatica, &c. In large doses it acts as a specific in asthma. It is also a good remedy in chronic bronchitis. In acute catarrh and hay fever it is given with arsenic. Externally the ointment is applied to obstinate ulcerations, skin diseases, and to promote absorption of effusions and deposits. A weak solution of *iodised phenol* is used locally in acute catarrah, tonsilitis, and sore throat.

Potassii Nitras, B. P.—Syn.—Potassium Nitrate.

Vernacular: Arab.—*Ubkir, Malh-i-barut, abqar;* Burm.—*Yân-zin;* Beng.—*Sôrâ;* Can.—*Petluppu;* Cing.—*Vedi-lundi, Pot-lunu;* Eng.—*Nitre, Saltpetre;* Guz.—*Suro khâra;* Hind.—*Shorah;* Mar.—*Shôra mîtha;* Malay—*Sandawa, veti-uppa;* Pers.—*Shorah Shingh Wedi lunu;* Sans.—*Yavakshra;* Tam.—*Putlil-uppu;* Tel.—*Shûrâ Kâram.*

Found in nature as an impure salt combined with calcium in certain soils in India and America. To obtain it, treat impure salt with wood ashes. Another method—Neutralize nitric acid with potassium carbonate, or sodium nitrate with potassium chloride.

Characters.—Colourless, transparent, striated, six-sided prisms, without any odour, and a cooling saline and pungent taste, soluble in cold water (1 in 4), in boiling water 2 in 1, insoluble in alcohol. When fused into round moulds it is called "Sal Prunella." Dose—5 to 20 grs. as refrigerant, 15 to 30 grs. as diuretic or vascular sedative well diluted.

Preparations.—Argenti et potassii nitras. Fumus potassii nitratis, charta nitrata or potassium nitrate paper, paper soaked in solution of nitrate of potassium (1 in 4) and dried. Asthmatic Pastilles.—Cones made of a mixture of nitre and potassium chlorate. Ozone papers.—Prepared with potassium nitrate and potassium chlorate.

Pulvis lobeliæ compositus. Potassium nitrate 240, boiling water 240. To this add lobelia powder, stramonium leaves powder, black tea powder, each 240, mix well and dry, and lastly add oil of anisi 1. Used as fumigation. Folia Stramonii Nitrata.—Potassium nitrate 1, stramonium leaves 2, and water 3, mix and dry. Himrod's cure,

a powder containing potassium nitrate, stramonium, lobelia, anisi, &c. The fumes are inhaled in asthma.

Physiological action.—Alterative, nervine sedative, refrigerant, diuretic, diaphoretic, antiseptic; in large doses, irritant. Locally, refrigerant. *Therapeutic uses.*—As a diaphoretic and diuretic it is a constant ingredient in fever mixtures. As a cardiac depressant it is given in inflammatory affections, acute rheumatism, pneumonia, &c. Also as a sedative in allaying irritation and inflammation of the mucous membranes, as in dyspepsia, bronchitis, &c. Combined with calomel and tartar emetic, it is given in fevers complicated with hepatic derangements. As a diuretic it is occasionally used in dropsies, gonorrhœa, leucorrhœa, &c. As a sedative of the pulmonary mucous membranes, the fumes of nitre paper are inhaled in spasmodical asthma, with or without bronchitis. As a lotion mixed with chloride of ammonium, it is applied to the skin in erysipelas, and used as a gargle in cynanche and tonsilitis.

Potassii Permanganas, B.P.—Potassium Permanganate.

Fuse dioxide of manganese with potassium hydroxide, potassium nitrate and potassium chlorate. Dissolve the resulting manganate of potassium in water, and act upon the solution with sulphuric acid or carbonic acid gas. It occurs in dark emerald green prismatic crystals, without any odour, and of a sweet, astringent taste, neutral reaction, decomposes oxidizable vegetable and animal substances as glycerine, alcohol, &c., forming a scanty brown residue. It is soluble in water (1 in 20), forming a rich purple solution. It is decomposed by heat or alcohol. Dose—1 to 3 grs.

Preparations.—Pills, which should be coated with kaolin, cocoa butter, petroleum, paraffin, &c. Lotion; Gargle: Condy's fluid (1 in 55). Liquor Potassii Permanganatis, B.P. (1 in 100).

Physiological action.—Disinfectant, stimulant of the mucous membrane, excitomotor and emmenagogue. It is non irritant and preferred to other disinfectants. In small doses it is a gastric and cardiac stimulant, but in large doses, or if continued for a long time, it depresses the heart, irritates the stomach, causing pain in the abdomen, and gives rise to vomiting and watery stools; it paralyses the muscles and degenerates the liver. It contains a large quantity of oxygen and hence acts as an antiseptic, deodorizant and disinfectant. As an active oxidizer it yields ozone, and becomes converted into the dioxide. Taken internally it is decomposed in the stomach and then absorbed. As an excitomotor it has a specific action on the uterus.

Therapeutic uses.—Internally dioxide may be preferred. As an injection of ½ grain in 1 ounce, it is used for gonorrhœa, to destroy fœtor from wounds, cancer, abscesses, and fœtid ulcers; to remove unhealthy discharges from vagina, urethra, nose, ears, foul breath and fœtid perspiration. It is used as a gargle in mercurial salivation, in ulcerated conditions of the mouth, &c. It is given internally in dyspepsia, flatulence, obesity, also in diphtheria, septicæmia, erysipelas, rheumatism, and low forms of fevers. In amenorrhœa it sometimes acts as a specific, and should be given a few days before the expected period. As an antiseptic and disinfectant it is applied directly to stings or bites from venomous reptiles as snakes. It is a successful antidote in cases of poisoning. It has no oxidizing effect in the presence of albumen, on atropine, caffeine, cocaine, aconitine, veratrine, pilocarpine, muscarine or phosphorus. It gives up its oxygen more quickly to albuminous substances than to strychnine, hydrocyanic acid, and oxalic acid. In morphine and eserine poisoning it exhibits a marked selective affinity.

POTASSIUM NITRITE.

Fuse together potassium nitrate and metallic lead. Occurs as white deliquescent sticks, soluble in water. Dose—½ to 2 grs.

Actions and uses.—Antispasmodic, diaphoretic, and diuretic. Given in asthma, epilepsy, and hemicrania.

Potassium osmate.—1 per cent. solution used for injection to relieve sciatica. Also given internally in epilepsy.

Potassium oxalate—Salts of sorrel or salt of lemon.

Potassii Phosphas—Potassium Phosphate—Dipotassic Hydric Phosphate—Dipotassium Hydrogen Phosphate.

Mix bone ash with sulphuric acid and water. The sulphate of lime is precipitated. The solution of acid phosphate of lime is next treated with potassium carbonate. It occurs as a deliquescent granular powder, soluble in water. Dose—1 to 10 grs.

Actions and uses.—Alterative, antacid and diuretic. As a solvent it is given in scrofula, rickets, urinary calculi, vesical catarrh, and phthisis.

Potassii Salicylas—Potassium Salicylate.—To obtain it, neutralize solution of potassium carbonate with salicylic acid. A white crystalline powder, highly deliquescent, soluble in water and alcohol. Dose—5 to 30 grs.

Actions and uses.—Antirheumatic, antipyretic and analgesic, given in rheumatism, pericarditis, pleurisy, lumbago and muscular pains.

Potassium and Aluminium Salicylate.—A double salt obtained by heating potassium and aluminium salicylate together. A fine powder, soluble in water.

Potassii Silicas—Potassium Silicate.—A solution of this, known as water glass or soluble glass.

Actions and uses.—As an antiseptic the solution, being less viscid than sodii silicas, is used as a paint (in 4 or more of water) for erysipelas, and for injection in gonorrhœa, gleet, leucorrhœa, ozœna, cystitis, &c. It is also used to impregnate bandages in place of starch.

Potassium Sozoiodal—Potassium Diiodo-paraphenol Sulphonate.—Sozoidal contains 54 per cent. of iodine, 20 per cent. of phenol and 7 per cent. of sulphur. Occurs as colourless or white crystals, soluble in water or glycerine (1 in 50). Used as ointment 10 to 25 per cent. Dusting powder.

Actions and uses.—Antiseptic; the dusting powder is used as an insufflation in ozœna, laryngitis and other respiratory affections. A good substitute for iodoform. The ointment is used in scabies, herpes, eczema, tinea tonsurans, syphilitic ulcers, impetigo, burns and scalds.

Potassii Sulphas, B.P.—Potassium sulphate.—Add carbonate, nitrate or chloride of potassium to sulphuric acid. Another method.—Purify impure acid sulphate of potassium, a by-product in the manufacture of nitric acid, with slaked lime. Occurs as colourless six-sided prisms, very hard to powder, without any odour, and of a bitter saline taste and neutral reaction; soluble in cold water (1 in 10), boiling water (1 in 4), insoluble in alcohol. Dose—10 to 40 grs. Generally given with rhubarb. Owing to its hardness it is used to pulverize tough substances, and hence forms an ingredient in pulvis ipecacuanhæ compositus, pilula colocynthidis composita and pilula colocynthidis et hyoscyami.

Physiological action.—Non-irritant, lactifuge and hepatic stimulant. A mild purgative, acting without causing griping. In large doses it is poisonous. *Therapeutic uses.*—Given in jaundice biliousness, dyspepsia, albuminuria and gastric fever; also as an antigalactic in mammary affections.

Potassii Succinas—Potassium Succinate.—A deliquescent powder. Dose—5 to 10 grs.

Actions and uses.—Hœmostatic. Given internally to control hæmorrhages.

Potassa Sulphurata, B.P.—Sulphurated potash. Liver of sulphur. Hepar sulphuris.

Heat together sublimed sulphur 1 part and potassium carbonate 2 parts till effervescence ceases. Then fuse to a dull heat. Evaporate the liquid contents without access of air, and make fragments. Occurs in irregular pieces of a liver colour; on exposure to air it absorbs water, oxygen and carbonic acid, and changes its colour to a greenish yellow, and finally to gray. It contains potassium carbonate, potassium hyposulphite, and potassium sulphide. The taste is bitter and alkaline, and it has the odour of sulphuretted hydrogen. Soluble in alcohol (1 in 2), soluble in water, forming a yellow solution. Dose—2 to 6 grs.

Preparation.—Unguentum potassæ sulphuratæ (30 grains to 1 ounce), lotion and bath. The bath contains crude salt 4 ounces to 30 gallons of water.

Physiological action.—In small doses alterative, diaphoretic and expectorant. In large doses narcotic. *Therapeutic uses.*—Given in obstinate skin affections, scrofula, gout, chronic rheumatism and painter's colic. As an expectorant and diaphoretic it is given in chronic bronchitis, nasal catarrh, croup, and as an antidote to lead and mercurial poisoning. Externally used as ointment, and as bath and lotion in chronic rheumatism, parasitic skin diseases, as scabies, &c.

Potassii Sulphis.—Potassium sulphite.—Pass sulphurous acid gas through a solution of potassium carbonate to saturation, and crystallize. A white deliquescent powder or opaque octohedral crystals, without any odour, and a bitter saline sulphurous taste. Slightly soluble in alcohol, soluble in water (1 in 3). Dose—5 to 15 grs.

Physiological action.—Disinfectant and anti-fermentative; it checks acid fermentation in the stomach and frothy vomiting. *Therapeutic uses.*—Given for sarcinæ ventriculi, also in gastric ulcers. A convenient mode of administering sulphurous acid.

Potassium Bisulphite.—In fine crystals, highly deliquescent, soluble in water. Dose—3 to 30 grs.

Actions and uses.—Aperient and tonic, given in constipation, and in general debility in women during weaning.

Potassii Tartras, B.P.—Soluble tartar. Potassium tartrate. Add to a boiling solution of potassium carbonate acid potassium tartrate till the solution is neutralized, filter and crystallize. White rhombic prisms, without odour, and of a saline taste, soluble in

water (1 in 1), insoluble in spirit. Dose.—As a diuretic 15 to 20 grs., as a laxative dose 30 to 240 grs.

Actions and uses.—In small doses it is a diuretic. In large doses a hydragogue purgative. It is milder than magnesium sulphate or sodium sulphate. It is used to relieve hepatic and portal congestions, hæmorrhoidal swellings and fevers. In lithiasis it renders the urine alkaline.

Potassii Tartras Acidus, B.P.—Acid Potassium Tartrate. Potassium Bitartrate.

Vernacular: Eng.—*Cream of Tartar* (*Purified*), *Argol*; Can.—*Draksh-i-uppoo*; Duk.—*Namak-e-angûr*; Hind.—*Namake-angûr*; Mar.—*Drâkshe-mitha*; Pers.—*Namake-angûr*; Sans.—*Drâksha Lavanam*; Tam.—*Draksha-vuppu*; Tel.—*Drâksha-vuppu*.

The crude cream of tartar or argol is a deposit in wine casks during the fermentation of grape juice or from the lees of wine. Boil argol in water and filter through charcoal. Crystallize the filtrate. Occurs either as fragments of cakes with opaque rhombic crystals on one surface, or a fine gritty white powder without any odour and of a pleasant acid taste and acid reaction. Soluble in cold water (1 in 200), in boiling water (1 in 18), insoluble in rectified spirit. On heating, it evolves inflammable gas and the odour of burnt sugar (caramel). Dose—20 to 60 grs. as a diuretic, 4 to 6 drs. as a purgative.

Preparations.—Pulvis jalapæ compositus, B.P., and confectio sulphuris, B.P.

Physiological action.—In small doses diuretic and refrigerant. In large doses a hydragogue purgative. It does not produce much depression. *Therapeutic uses.*—Used as a refrigerant and febrifuge in fevers and in inflammatory affections. As a diuretic and purgative with infusion of juniper given in various forms of cardiac dropsy and in costiveness; also in acute nephritis or albuminuria, scurvy, hepatitis, &c.

Potassii Tartra Boras—Potassium Tartra Borate.—To obtain it, heat together boracic acid 1 and potassii bitartras 4 with water 10. A crystalline powder, soluble in water (1 to 2). Dose—20 to 30 grs.

Used as a solvent for uric acid calculi; better than the magnesium salt.

Potassii Telluras—Potassium Tellurate.—Fine white crystals. Soluble in water. Dose—$\frac{1}{8}$ to $\frac{1}{3}$ grain in pills.

Actions and uses.—Antihydrotic. Used in night sweats of phthisis and also against day sweats. Imparts disagreeable telluric odour to the breath.

SODIUM, B.P.—NATRIUM.

Habitat.—Peru, California, Persia. Never met with in a pure state. It exists in nature in large quantities in combination; with chlorine it forms sodium chloride, a salt found in sea-water, rock salt, lakes, springs and mineral waters. It is also found in the animal fluids, and abundantly in marine plants. A soft metal of a bright metallic lustre when freshly cut. It rapidly oxidizes in the air. With water or alcohol it evolves hydrogen. It gives an intense yellow colour to flame. The sodium salts are generally colourless or white. Their diffusive power is also less. They are less powerful as cardiac depressant than the potassium salts.

Sodii Acetas—Sodium Acetate.—Saturate sodium carbonate with acetic acid. Fuse, evaporate, and dry. Efflorescent transparent colourless crystals, of acetous odour, and sour taste, and faintly alkaline reaction. Soluble in water (1 in 1·4), in alcohol (1 in 30). Dose—20 to 40 grs. as a diuretic, 60 to 120 grs. as a purgative.

Actions and uses.—In small doses alterative and diuretic. In large doses purgative. As a diuretic it is less active than the potash salt, given in dropsy. As an alterative it is given in rheumatism, visceral and glandular enlargements, also in gonorrhœa.

Sodii Arsenas, B.P.—Sodium arsenate. Anhydrous arseniate of sodium. Disodium hydrogen arsenate.—Fuse together arsenious anhydride with sodium nitrate and sodium carbonate, dissolve the product in water and crystallize. To the crystallized sodium arsenate apply heat, when the anhydrous arsenate is formed. A white powder or colourless prisms very liable to effloresce on exposure to the air, soluble in glycerine (1 in 2), in water (1 in 6), yielding alkaline solution. It is slightly soluble in cold or boiling alcohol. Dose—$\frac{1}{40}$ to $\frac{1}{10}$ gr.

Preparations.—Liquor Sodii Arsenatis, B.P. Solution of sodium arsenate (1 gr. of the anhydrous arsenate salt in 110). Dose—2 to 8 ms. It contains about half as much arsenious acid as is found in Liquor Arsenicalis. It is an ingredient in "Pearson's" solution, which contains arsenite of sodium (1 in 600). Arsenical cigarettes. Paper impregnated with sodium arsenate, contains $\frac{1}{4}$ grain in each. Used for asthma.

Actions and uses.—Alterative and nervine tonic. Given in skin affections and nervous diseases, diabetes, &c. It is similar to, but less irritating than, liquor potassæ arsenitis.

Sodii Benzoas, B.P.—Syn. Sodium Benzoate. Add benzoic acid to a hot concentrated solution of sodium carbonate to neutralization. Evaporate and crystallize. A white, somewhat crystalline or amorphous, powder, of a faint benzoin odour and sweet astringent taste, soluble in water (1 in 2), in cold alcohol (1 in 24), and in boiling alcohol (1 in 12). Dose—5 to 30 grs.

Used as solution 5 per cent. as a spray to the larynx in diptheria and phthisis.

Actions and uses.—Hepatic stimulant, antirheumatic, antipyretic, and antiseptic. Given in diseases depending on vegetable parasites and micro-organisms. In acute rheumatism and gout a dose of 15 or 20 grains every 2 hours has proved of great success. Used in lithic acid gravel, in hepatic congestion, gastric and intestinal catarrh and puerperal and other septic fevers, diphtheria, tonsilitis and whooping cough. In uræmic poison it cuts short the uræmic attacks. In cystitis with alkaline urine and in albuminuria, benzoic acid is converted into hippuric acid, and hence very useful. In cholera, rectal injection of 2 drs. of sodii benzoas in a quart of hot water is very useful.

Sodii Bisulphis—Sodium Bisulphite.—A fine powder or opaque prisms. Taste disagreeable, odour faint and sulphurous. Soluble in water (1 in 4), and in alcohol (1 in 12). Acid reaction. Converted by strong heat into sulphur and sulphate of sodium. Used as a solution. Dose—4 to 12 grs.

Actions and uses.—Antiseptic. Used internally for sour taste in the mouth, diphtheria, bilious vomiting. Externally the solution is applied in skin diseases.

Borax, B.P.—Sodii Biboras:—Syn. Biborate of Sodium. Sodium Pyroborate.

Habitat.—Thibet, Persia, America.

Vernacular.—Eng.—*Borax, Tincal*; Arab.—*Milheas-saghah, Boraqe, Baorak*; Beng.—*Kuddia-khar, Sohaga*; Burm.—*Letkhya*; Chin.—*Poncha*; Cing.—*Puskara, Vengaram*; Guz.—*Tankan-khar*; Hind.—*Tinkal, Sohaga*; Malay.—*Palleri*; Maleal.—*Batteri Sijar, Ponkaram*; Pers.—*Tinkar*; Sans.—*Tinkanah*; Tam.—*Velligaram*; Tel.—*Ellegaram*; Duk.—*Sahagah*; Can.—*Biligara*.

Sodium borate occurs in nature. It is artificially prepared by fusing crude borax (native calcium borate) with sodium carbonate. Also prepared from the native boric acid from the lagoons in Tuscany by boiling it with sodium carbonate. Crude borax is found in masses by evaporation of water on shore of lakes in Thibet or California, and in crystals in the mud of lakes surrounded by hills. In this crude state it is known as sohagoor or tinkala. These masses are dug out and washed and purified. The solution is evaporated and crystallized, when it is known as tankan khar or borax of commerce.

Colourless, transparent, six-sided prisms or white powder, slightly efflorescent, without odour, and of cooling but a bitterish taste. It has slight alkaline reaction, soluble in cold water (1 in 25), in boiling water (2 in 1), in glycerine (1 in 1), insoluble in alcohol, slightly soluble in volatile oils. It turns turmeric paper brown. It colours the flame intensely yellow. A hot saturated solution, when acidulated with any of the mineral acids, lets fall, as it cools, a scaly crystalline deposit of boracic acid. Dose—5 to 20 grs. largely diluted in water. Telio Tankan Khar.—A variety of borax, an impure salt, is met with in small pieces, or in regular smooth six-sided prisms. Colour is grayish white and somewhat translucent. When exposed to the air, colour becomes opaque or dirty white. Has a faintly balsamic odour and tastes like papada khara.

Preparations.—Mel Boracis, B. P. (1 in 9½); Glycerinum Boracis, B.P. (1 to 6).

Actions and uses.—Emmenagogue, astringent, and sedative; as an antacid it may be used in acidity of the stomach, in dropsy combined with other diuretics, as an emmenagogue in amenorrhœa, dysmenorrhœa, menorrhagia, puerperal convulsions, and to stimulate and promote uterine pains during labour. As a solvent it is given in uric acid diathesis with good results. As an antiseptic it destroys low vegetable organisms, hence given in fœtid stools of diarrhœa in children. As a sedative to the mucous membranes in irritable condition of the fauces and pharynx, in chronic bronchitis of children, in cystitis, &c., it is given with benefit. Locally applied as a wash to remove the epidermis from the skin. As a sedative lotion it is used in acne, freckles, cloasma, &c. It allays itching in urticaria, psoriasis, pruritus pudendi, vulvi, scroti and ani. In the form of mel boracis or glycerinum boracis it is applied to sore mouth in ptyalism, to aphthæ, to thrush and to the pharynx in pharyngeal affections, to parasitic stomatitis, to the urethra in urethritis, also to aphthous

ulcerations, cracked tongue and sore nipples, &c. Borax dissolved in the mouth restores the voice in hoarseness. It is used as an injection (1 in 5) in cystitis, leucorrhœa and gonorrhœa and in lithic acid deposits. As glycerinum boracis it is applied in various forms of skin diseases. In epilepsy it is useful where bromides have no effect. The natives use it very largely in convulsions in children, in bronchitis and asthma, and in impotence in adults. Locally as a resolvent for enlarged glands and tumours, it is applied with alum and milk curd. Given in large doses it produces toxic effects known as borism. These include inflammation of the intestinal and other mucous membranes, albumen in the urine, general anasarca. Boroglycerine (1 to 45), as an antiseptic lotion is useful in purulent ophthalmia and diphtheria.

Sodium Boro-benzoate.—White crystalline powder. Soluble in water. Dose—5 grs. to 1 dr.

Actions and uses.—Antiseptic, antilithic and diuretic. Given in rheumatism, lithic acid gravel, septic fevers, &c.

Sodii Bromidum, B. P.—Sodium Bromide.—Add bromine to a solution of sodium hydroxide. Add charcoal to the resulting solution of sodium bromide and sodium bromate. Bromate is decomposed by heat. Deliquescent white granular powder or cubic crystals, without any odour and of pungent saline taste, soluble in water (1 in 2), alcohol (1 in 16). Contains 78 per cent. of bromine. Dose —5 to 30 grs.

Preparations.—Elixir sodii bromidi (1 in 6). Dose—1 to 2 drs. Sal Bromatum Effervescens—Effervescent bromine salt. To obtain it, mix together potassium bromide 400, sodium bromide 400, ammonium bromide 200, sodium bicarbonate 1000, citric acid 380, tartaric acid 445, sugar 175, and add alcohol 300. Elepizone, a nostrum, containing sodium bromide 30 grs., ammonium bromide 30 grs., potassium bromide 20 grs., tincture of nux vomica 15 ms., caramel q.s. to 1 ounce of winter green water. Dose—1 to 4 drs.

Actions and uses.—Hypnotic, more powerful than potassium bromide, but less irritating to the stomach and less depressant. Used for sea sickness, in epilepsy with cardiac complication, in puerperal mania with great depression. In anæmia following lung disease a mixture of bromides of potassium, sodium and ammonium is used rather than a single salt alone.

Sodii Carbonas Impura.—Syn. Impure sodium carbonate.

Vernacular : Eng.—*Dhobi's earth* ; Arab.—*Lili mil hulqili* ; Guz.—*Saji khâra* ; Hind.—*Sajji-khar, Sajji-noon* ; Duk.—*Chour-ka-namake Sajji-noon* ; Mar.—*Sajje khara* ; Pers.—*Shi-khara, Tine-gasur* ; Sans.—*Sarjikakahara* ; Tam.—*Chontoo munnoo, Shach chi Karam* ; Tel.—*Saviti munnoo vuppoo.*

Obtained from the ashes of chenopodiaceous plants, a species of salt worts growing near the sea ; from kelp or barilla by incinerating sea weeds ; from Dhobee's earth by adding quicklime to the earth, and boiling repeatedly with water. It contains 25 per cent. of sodium carbonate ; from bângad khar which also contains a large quantity of silica. It is called bângad khar from its use in the manufacture of native glass-bangles.

Occurs in porous, granular masses of a dark-brown or ash colour or as heavy hard pieces of a grayish white colour. Smell like that of common ash, taste sharp biting, alkaline, resembling that of impure potassium carbonate (papada khara). Dose—5 to 10 grs.

Actions and uses.—The native *hakims* use it as antacid and alterative in dyspepsia, vomiting, and flatulence.

Sodii Carbonas, B.P.—Sodium carbonate, washing soda. Obtained from the ashes of marine plants or by lixiviation and crystallization of barilla, or, as now prepared, from sodium chloride by its interaction with ammonium bicarbonate and subsequent ignition. Another method.—Add sulphuric acid to sodium chloride, when sodium sulphate is formed ; burn sodium sulphate with carbon and calcium carbonate, a chemical decomposition takes place, at first it is converted into sulphide, and then into carbonate.

Transparent, colourless, rhombic crystals, without any odour, of an alkaline taste and a strong alkaline reaction. It crumbles into powdery mass when exposed to the air. It is slightly caustic. Soluble in water (1 to 2), in glycerine (1 to 1·02), and insoluble in alcohol and ether. 20 grs. neutralize 9·8 grs. of citric acid and 10½ grs. of tartaric acid. Dose—5 to 30 grs.

Sodii Carbonas Exiccatus, B.P.—Exsiccated sodium carbonate. It is prepared by roasting carbonate of sodium. Dose—3 to 10 grs.

Sodium Hydroxide, B.P.—Soda Caustica—Caustic soda. Sodium Hydrate.—Evaporate liquor sodæ to dryness, and pour into moulds. Dry white pencils or semi-transparent, very alkaline and corrosive, fused masses, without any odour, and strong alkaline reaction, soluble in cold water (1 in 1), and in boiling water (10 in 8). As a caustic it is milder than potassa caustica.

Preparations.—Liquor Sodii Carbolatis, Liquor Sodii Phenatis.—It contains 8 per cent. of phenol in combination with caustic soda. Pasta Londinensis. London paste.—A paste made of caustic soda and unslaked lime, equal parts. It is less painful than Vienna paste. Sodium Hypobromite Solution.—Contains caustic soda and bromine. The solution is used to estimate the amount of urea in a given quantity of urine. On adding the solution, nitrogen is evolved from the urea and measured. In place of this solution, liquor bromi, consisting of potassium bromide, bromine and water, may be used. Liquor Sodæ. Solution of soda.—Heat together solution of carbonate of sodium with slaked lime. It contains 4·1 per cent. by weight of hydrate of soda. A colourless liquid of intensely caustic taste, without any odour, and of a strong alkaline reaction. Dose—10 to 30 ms.

Actions and uses.—Sodium hydrate has less affinity for water, and is less escharotic than caustic potash. It does not destroy tissues deeply, nor extend over the adjacent parts. Liquor sodæ renders the secretions and blood alkaline. Internally it is used in certain forms of dyspepsia connected with biliary derangements. In pharmacy, it is chiefly used in the preparation of sulphurated antimony. Caustic soda is a strong caustic and escharotic, used to destroy tissues like caustic potash. Liquor sodii carbolatis possesses antiseptic and anæsthetic properties of carbolic acid, but is less caustic.

Sodii Bicarbonas, B.P.—Sodium Bicarbonate.

Pass carbonic anhydride gas through a saturated solution of sodium carbonate. Another method.—Prepared by the interaction of hydrochloric acid and fragments of marble or sodium chloride and ammonium bicarbonate. A white monoclinic crystal or an opaque powder, slightly alkaline. Soluble in water (1 in 11), insoluble in spirit. 20 grs. of it neutralize 16·7 grs. of citric acid and 17·8 grs. of tartaric acid. Dose—5 to 30 grs.

Preparations.—Pulvis sodæ tartaratæ effervescens, B.P. Pulvis effervescens, Seidlitz powder. It contains Bicarbonate of sodium 40 grs. and Sodium potassium tartrate 120 grs. Mix to make into one powder; Tartaric acid 38 grs., also make into one powder. Both to be dissolved in water separately and mixed together when used. Trochiscus Sodii Bicarbonatis, B.P.—Contains sodium bicarbonate, (3 grs. in each). Pulvis Salinus Anticholeraicus—It contains sodium bicarbonate 30 grs., sodium chloride 20 grs., potassium chlorate 7 grs. Dose—60 grs. To arrest the pain and purging of cholera.

Physiological action.—Sodium salts, such as the carbonate and the bicarbonate, are slightly irritant. Primarily feebler antacids than potassium salts, and less diuretic, and secondarily alterative. They stimulate the gastric juice and increase alkalinity of the blood, and are less depressant than the potash salts. Locally in large doses they paralyze the muscular and nervous tissues.

Therapeutics.—As antacid given in small doses before meals and on an empty stomach. They are given in biliary calculi, cardialgia, atonic dyspepsia, vomiting and flatulence, also in highly acid urine or lithiasis, in rheumatism, albuminuria, in diabetes and frontal headache. As an alterative it is given in papular and scaly skin eruptions. Locally a solution of bicarbonate is employed as a lotion in burns, eczema, and in pruritis. In the form of baths and ointment it is used in skin diseases and in liver affections. In tonsillitis and in hypertrophy of the tonsils as an insufflation or as a dusting powder its application is very beneficial. A saturated solution is an useful application in recent burns.

Sodii Chloras.—Sodium Chlorate.—Mix together hot solution of sodium carbonate and tartaric acid—equal parts, and add potassium chlorate. Colourless transparent crystals or cubes, without any odour and cooling saline taste. Soluble in water (1 in 1), glycerine (1 in 5), and alcohol (1 in 100). Avoid application of heat or trituration, as it explodes readily when brought into contact with any organic matter as cork, tannin, sugar or any oxidizable subsance as sulphur, antimony sulphide, phosphorus, &c. Dose—5 to 15 grs.

Used as wash or injection. Gargarisma chlori—chlorine gargle. Contains sodium chlorate 10 grs., hydrochloric acid 30 ms., water 1 pint. Tablets of sodium chlorate and borax or trochiscus sodium chloratis, 3 grs. in each. Euchlorine solution. Contains 18 to 30 grs. of potassium chlorate with 10 minims hydrochloric acid and 8 ounces water. Used as gargle, spray or paint in diphtheria.

Actions and uses.—Antiseptic, deodorant, alterative. It irritates the kidneys. Given in diphtheria, tonsillitis, inflammation of the pharynx, larynx, in stomatitis and in mercurial phyalism. In gastric cancer 2 to 4 drs. given daily are very useful. Externally it is used as a wash, gargle, or injection in ulceration of the mouth or along the edges of the gums. Tablets are useful in loss of voice or congested sore throat. Chlorine gargle is used as a detergent and also as an inhalation. Euchlorine solution is used as a gargle in diphtheria.

Sodii Chloridum, B.P.—Sodium chloride, Muriate of sodium.

Vernacular.—Arab.—*Mitha, Mil-huls-aajin;* Ben.—*Nimok Lesu;* Burm.—*Themg-dan-hsa;* Can.—*Uppu;* Cing.—*Shih-yen, Lunu;* Eng.—*Common salt, Table salt;* Guz.—*Mithun;* Hind.—*Lun, Nun; Namaka, Kala-nimak;* Mah.—*Lavana, Mitha;* Malay.—*Garano, Uppa-Lavanam;* Pers.—*Namake-khurdam;* Sans.—*Samudra Lavana, Lavanam;* Tam.—*Uppal;* Tel.—*Uppu, Lavanam;* Duk.—*Nimak, Namak.*

Samudra lavana. The word is derived from samudra—sea and lavana—salt. The salt produced from sea-water.

In India two varieties are met with :—(i) *Dagadi Mith,* hard crystalline cubes of a dirty, brownish white colour. (ii) *Bharadi Mith,* sun-dried crystalline salt of a white colour, crystals shining and small, without any odour and of a saline taste.

Sodium chloride is found in nature, forming 2·5 per cent. of the waters of the ocean. It is a natural salt obtained in a solid form. It exists as rock salt in mines. It is obtained by evaporation of brine springs or sea-water. When obtained from sea-water it is known as "Samudra lavana." It is the most important saline constituent of the animal organism, and exists in the blood in solution with fibrin and albumin. Occurs as transparent cubes or small white crystalline grains, without any odour, and of saline taste and neutral reaction. Soluble in water 1 in 2·8, insoluble in alcohol and chloroform. Dose—As a stomachic tonic 10 to 30 grains, as a cathartic 2 to 4 drachms, as an emetic 4 to 8 drachms in hot water.

Used for baths—1 pound in 3 gallons of water. As saline solution for intravenous injection—Sodium chloride 50 grs., potassium chloride 3 grs., sodium sulphate 2½ grs., sodium carbonate 2½ grs., sodium phosphate 2 grs., and water one pint. As saline solution for rectal injection, sodium chloride 60 grs., boiling water 1 pint.

Physiological action.—Antiseptic, antiperiodic, anthelmintic and deobstruent. Internally in small doses it increases the secretion of the salivary and gastric glands, sharpens appetite, and promotes digestion of vegetable food. It excites thirst and thus assists absorption of liquid food. In a diluted form it enters the blood and dissolves albumens and globulins. In a concentrated form it is an irritant to the cut surfaces, to the mucous membranes, muscles and nerves. It is also a rubefacient. It decreases the secretion of mucus, promotes absorption of effused products. It is eliminated in the urine. *Therapeutics.*—In fevers, dyspepsia and bilious diarrhœa in children it is given with benefit. As a saline intravenous injection (or enema) it is given during collapse stage after operations and in uterine hæmorrhages. As an enema it relieves flatulence and colic, and

prevents the paroxysmal attack of epilepsy. It is a popular remedy for lumbricoid worms. In neuralgic headache it may be used as a snuff. It relieves hæmoptysis and migraine ; its solution 1 per cent. is a topical application to stop hæmorrhages from wounds and a wash in catarrh of the nostrils, in ozæna, and in chronic diseases of the pharynx and larynx. Used as an antidote in poisoning by silver nitrate. Heated salt is largely used as dry hot fomentation for the relief of painful joints and swollen scrofulous glands. Salt water or sea bathing is recommended for the cure of various skin affections and of rheumatic and muscular pains. It is also used as a dentifrice.

Sodii Chloridum Impura.—In the Indian bazaar two impure varieties of common salt are met with, and are largely used medicinally by native practitioners. These are sindhav and savar-mith.

Sindhav.—*Vernacular* : Arab.—*Mil-he-tabarzad ;* Duk.—*Sondanimak ;* Eng.—*Rock salt ;* Guz.—*Sindha-luna ;* Hind.—*Sendhalon ;* Malyal—*Intuppu ;* Pers.—*Namake-sang ;* Sans.—*Sindhave ;* Tam.—*Indunat-tuppu, Shindu-dêsha-vuppu ;* Tel.—*Shaindd-lavanam, Chandru-uppu.*

Regarded as an impure chloride of sodium containing a little sulphuret of iron, found in nature in extensive beds mostly associated with clay and calcium sulphate. To obtain it, dig holes into these rocks, which soon become filled up with salt water ; evaporate the water, and the salt is ready for use. It is found in small white crystalline grains or transparent cubes. It is brownish white externally and white internally. It is without any odour and of a pure saline taste. Dose—As a cathartic 1 to 2 drs., as an emetic 4 to 8 drs., in hot water.

Preparations.—VADAVANAL CHURANA.—Compound powder.—Contains rock salt, piper longum, pipal, piper chavak, chitrak, ginger, myrobalans—equal parts. Mix and make a powder. Dose—5 to 15 grs. Used in anorexia, flatulence, biliousness.

LAVANA TRATI YADI CHURANA.—Contains *Sindhav* 2, *Sañchal* 2, *Sájikhár* 2, *Javakhár* 2, *Variáli* 3, *Vekhand* 1, *Ajamod* 3, *Tulasibij* 2, *Jiruñ* 3, *Sháhjiruñ* 2, *Miri* 3, *Pipali* 4, *Pipali mul* 5, *Hiñg* (baked) 3, *Kachorá* 1, *Venivel* 2, *Kálijiri* 3, *Suñth* 2, *Chitrak* 1, *Vávadiñg* 2, *Amali* 1, *Dálimb-chhál* 3, *Nishot* 2, *Dáñtimul* 2, *Indrayána* 1, *Bharañg-nu-mul* 2, *Chirphal* 2, *Himaj* 3. Mix and make a powder. To this add *Adu-no-ras* and *Maliñga-no-ras* to form a pill mass. Dose—5 to 10 grs.

PANCHA LAVANA. an ch—five, and lavana—salt. It means the five salts, namely, rock salt, Sambar salt, common salt, sanchal or black salt, and bid lavana.

Vernacular: Mar.—*Pancha lona;* Sans.—*Paucam, Pancha lavana.*

A dirty grey or brown powder, without any odour, and of a pungent taste. Dose—10 to 30 grs.

BID LAVANA.—An artificially prepared salt. Contains rock salt, sindha-lona and table salt, each 2 parts, and himaja 1 part. Met with in flat pieces. Colour generally dirty white with a shade of pink, without any odour, and of a pungent and somewhat astringent taste. Dose—10 to 30 grs.

Actions and uses.—Rock salt is cathartic and emetic, also stomachic. Other properties are the same as those of common or table salt. The purgative properties are probably due to the magnesium chloride it contains. Vadavanal churan is used in anorexia, flatulence and biliousness. Lavana tratiyadi churan is used in congestion of the liver, spleen and kidneys. Also in rheumatism, neuralgia and constipation. Bid lavana is a stomachic, tonic, carminative and alterative. Used in dyspepsia, flatulence and colic; also in enlargements of the liver and spleen. Panch lavana is a carminative, laxative, stomachic, tonic. Given in colic, indigestion and enlargement of the liver and spleen.

Savarmith.—*Vernacular*: Bomb.—*Vadagru mithû;* Eng.—*Chloride of sodium, impure;* Hind.—*Savara mith;* Mah.—*Sambhara luna, Sambari mitha;* Sans.—*Sambara nona, Goda lavana.*

Collect salt water in cavities from the salt lake of Sambar, near Ajmer, and evaporate. Clear, translucent, rhomboid, square or brownish white crystals, or angular globules. In appearance it resembles alum. The colour is grayish or dirty white, without any odour, and of a pungent or saline taste. Dose—5 to 15 grs.

It is one of the ingredients of panch lavana and sanchal.

Sanchola.—*Vernacular* : Arab.—*Mithe-nifti, Mihe-asvad;* Beng.—*Kala-nun;* Burm.—*Samê;* Can.—*Kare-uppu;* Dak.—*Bit-loban;* Eng.—*Black salt;* Guz.—*Sanchala;* Hind.—*Sanchara, Bid-lon, Pada-lon, Pada-namak;* Malyal.—*Karutta-uppa;* Mar.—*Kala-mitha-padelona;* Pers.—*Nimake-Siyah;* Sans.—*Sonavara-chala, Krishtna lavanam;* Tam.—*Gendaka vuppu;* Tel.—*Nalla uppu.*

Manufacture.—Mix together Sambara salt 6 parts and Amala 2 parts, and expose to a strong heat of the sun, or heat together black salt, saji khara (sodium carbonate), Amala (emblic myrobalans) and

himaj (chabulic myrobolans), equal parts, &c. Dark shining granules of a mild saline and somewhat nauseous taste. It is one of the ingredients of pancha lavana.

Actions and uses.—Carminative, aperient, stomachic, tonic, and alterative. It is used in dyspepsia, flatulence, colic, chronic enlargements of liver and spleen.

Sodii Citro-tartras Effervescens, B.P.—Effervescent sodium citro-tartrate. Mix sodium bicarbonate 51 with citric acid 18 and tartaric acid 27; add sugar 15. Small white crystals, without any odour and of a saline taste, freely soluble in water, slightly so in alcohol. Dose—60 to 120 grs.

Actions and uses.—Refrigerant, diuretic. Given as a cooling drink in fevers and in uric acid diathesis, superior to potassium citrate.

Sodii Fluoridum Purum.—Sodium fluoride.—A dry white crystalline powder, soluble in water. Dose—$\frac{1}{24}$ to $\frac{1}{2}$ gr. Used as solution $\frac{1}{10}$ per cent., wash $\frac{1}{2}$ to 1 per cent.

Actions and uses.—Disinfectant, antiseptic, antiperiodic and antispasmodic. The solution is applied to wounds. As a wash it is used in stomatitis and ulcerated mouth and sore throat. As a dressing for wounds, bruises, &c. Internally given in epilepsy, malaria, and tuberculosis.

Sodii Hippuras.—Sodium Hippurate.—Add hippuric acid to a solution of sodium bicarbonate and evaporate. A white amorphous powder. Freely soluble in water. Dose—5 to 30 grs. Used as solution or powder.

Actions and uses.—Diuretic, solvent for urates. Like sodium benzoate it is given in gout and rheumatism. In uric acid calculus it is given with citrate of lithium or potassium.

Sodii Hypophosphis, B. P.—Sodium Hypophosphite.—Add solution of sodium carbonate to calcium hypophosphite, filter and evaporate. It sometimes explodes during evaporation, owing to the phosphoretted hydrogen gas being evolved. Deliquescent, small, colourless, rectangular plates or white granular powder, without any odour, and of a saline bitter taste, soluble in water (1 in 1), in alcohol (1 in 30), and insoluble in ether. Heated in air, it yields spontaneously inflammable hydrogen phosphide and hydrogen. It colours the flame yellow. It is rapidly attacked by oxidizing agents. Dose—3 to 10 grs.

Preparation.—Syrupus sodii hypophosphites 1 grain in 1 drachm. Dose—1 to 4 drachms.

Actions and uses.—Nervine stimulant and tonic. Promotes nutrition and improves digestion, and hence recommended in phthisis, scrofula, anæmia, &c.

Sodii Hyposulphis.—Sodium hyposulphite, sodium thiosulphate. Prepared by the action of carbonate of sodium on calcium hyposulphite, distinguished from other sodium salts by adding hydrochloric acid to its solution, when sulphur is precipitated and sulphurous acid gas given off. Colourless monoclinic prisms, effervescent, without odour, and of cooling, bitter sulphurous taste. Soluble in water (1 in 0·65), insoluble in alcohol. Dose—10 to 25 grs.

Actions and uses.—Alterative, antiseptic, parasiticide and antifermentative. Used in aphthæ, boils, scrofulous abscesses, diphtheria, to check vomiting due to fermentation in the stomach, dyspepsia, flatulence, and excessive tympanitis. Occasionally given as an alterative in syphilis and rheumatism. Externally its lotion is used in parasitic skin affections, chloasma and ringworm.

Sodii Iodidum, B. P.—Sodium Iodide. Add iodine to a solution of sodium hydroxide, evaporate to dryness, and heat with charcoal. Another method.—Prepared by the interaction of sodium carbonate and ferrous iodide. Colourless, deliquescent, white, crystalline powder, or in cubical crystals; without any odour and of saline bitter taste. Soluble in water (1 in 0·6), in alcohol (1 in 3). Dose—5 to 20 grs.

Actions and uses.—Alterative and absorbent. Same as those of potassium iodide, but less depressing and more assimilable: hence it can be given in larger doses. Given in rheumatism, asthma, tertiary syphilis, scrofula, chronic bronchitis, &c.

Sodii Nitras.—Sodium Nitrate. Found native in Chili, Peru, &c.

Eng.—*Cubic nitre, chili saltpetre, chili nitre.*—Neutralize sodium carbonate with nitric acid; or potassium nitrate with sodium chloride. Or purify native sodii nitras and crystallize. Slightly deliquescent. Fine powder, or colourless, transparent, rhombohedral crystals, without any odour, and of saline bitter taste, neutral reaction. Soluble in water (1 in 1·3), in alcohol (1 in 100). Dose—15 to 30 grs., as a purgative 2 to 6 drs. Used as an aqueous solution.

Actions and uses.—A mild cathartic and solvent of false membranes. Given in enteritis and dysentery. Externally the solution is applied

to rheumatic joints ; also locally used as a spray in diphtheria. Not much used medicinally.

Sodii Nitris, B.P.—Sodium Nitrite. Fuse together sodium nitrate, charcoal, and starch or fuse sodium nitrate and metallic lead. Lixiviate with water, add nitric acid ; concentrate and crystallise. A deliquescent salt. In white or yellowish white or colourless, transparent, hexagonal crystals or sticks or pencils, without any odour, and of a saline taste. Very soluble in water (1 to 1·5), slightly in alcohol. Dose—1 to 2 grs.

Preparation.—Spiritus ætheris nitrosi. Spirit of nitrous ether, or sweet spirit of nitre.

Actions and uses.—Antispasmodic, diaphoretic, and diuretic. Similar in action to nitroglycerine and amyl nitrite, but it is milder and more uniform. Nitrite of amyl and nitroglycerine act rapidly, but their effect is not lasting. Sodium Nitrite is given with hyoscyamus in epilepsy, angina pectoris, Bright's disease, rheumatism, in bronchial and neurotic asthma, and in diseases of the urino-genital organs. In angina pectoris it is given with sodii hippuras.

Sodii Permanganas.—A solution of this salt is green in colour and like the potassium salt used as a disinfectant.

Sodii Peroxidum—Sodium Dioxide.—A white amorphous powder. Soluble in water. The solution produces heat and evolves oxygen gas. Used as an antiseptic in tooth stopping.

Sodii Phosphas, B.P.—Hydric di-sodic phosphate. Disodium hydrogen phosphate. Sodium phosphate, known also as "Tasteless aperient salt." Sodium orthophosphate and Rhombic phosphate of soda. Exists in nature both in the organic and inorganic kingdoms. To obtain it, act upon bone ash with sulphuric acid. The solution contains acid calcium phosphate (superphosphate) and sulphate of lime. The latter is precipitated. The filtrate is next neutralized with sodium-carbonate, when calcium carbonate and sodium phosphate are formed. Large colourless rhombic prisms, terminated by four converging planes efflorescent without any odour, and of a saline taste, soluble in water (1 in 6), insoluble in alcohol. Dose—As a purgative 2 to 4 drs., as a diuretic 30 to 120 grs.

Sodii Phosphas Effervescens, B.P.—Effervescent sodium phosphate. Sodium phosphate and sodium bicarbonate, each 5 parts, tartaric acid 2·7 parts, citric acid 1·8 parts. Mix and triturate

together. It contains 50 per cent. of phosphate of sodium. Dose—1 to 2 drs.; for a single dose 2 to 4 drms.

Sodii Phosphas Exsiccatus.—In white granules, of a saline taste. Dose—10 grs. to 4 drs.

Physiological action.—Sodii phosphas is a mild and efficient aperient. In small doses it acts as an antacid and diuretic, also alterative and resolvent. It stimulates the biliary secretions. *Therapeutic uses.*—As an alterative and aperient it is given in scrofula, rickets, in chronic rheumatism to children, and to adults in delicate health; also given in febrile and inflammatory affections. It is given in catarrh of the biliary ducts and of the duodenum, in jaundice with chalky stools, and in gallstone. In hepatic calculi it is given with sodium arsenate. As a solvent it is given in uric acid diathesis, and in vesical calculi. Also given in obesity. Locally applied to chronically inflamed joints.

Sodii Pyrophosphas—Sodium Pyrophosphate.—Heat sodium phosphate to dull redness. Colourless, monoclinic prisms, without any odour, and of a cooling, saline and feebly alkaline taste. Soluble in water (1 in 12), insoluble in alcohol. Dose— 1 to 4 drs.

Preparation.—Ferri phosphas solubilis.

Actions and uses.—Hepatic stimulant and alterative. Given in scrofula, rickets, jaundice, &c. It may be used for the same purposes as phosphate.

Sodii Salicylas, B.P.—Sodium Salicylate. Neutralize solution of sodium hydroxide or sodium carbonate with salicylic acid. Also prepared from oil of winter-green. A colourless or slightly yellow silky crystals, or amorphous powder, or small crystalline scales, of sweet saline taste, and without any odour. Soluble in water (1 in 0·9), in alcohol and glycerine (1 in 6). The solution is neutral or faintly acid. Heated to redness the salt is inflammable, and emits vapour of a yellow colour. The taste may be disguised by the extract of liquorice or syrup of ginger. Dose—10 to 30 grs. It has the property of increasing the solubility in water of caffeine, theobromine, exalgin, phenol, menthol, creosote, guiacol and thymol.

Preparations.—Snuff. Snuff contains salicylate of sodium 80 grs., cocaine hydrochlorate 22 grs., and boracic acid 1 ounce. Used to relieve nasal catarrh. Rectal enema (1 drachm in 3 pints of water). Given in dysentery. Granular effervescent sodium salicylate (1 in 10). Dose—1 dr. or more.

Physiological action.—Diaphoretic, antipyretic, antiseptic and anti-rheumatic. In small doses it reduces the body temperature, lowers

the pulse and the arterial tension. It renders the secretion of bile more fluid. In large doses it is a gastric irritant and causes nausea and depression of spirits. *Therapeutic uses.*—Used to relieve neuralgic pain, as sciatica, vertigo, &c.; as an antipyretic, in fever of acute rheumatism, in influenza and in other fevers, acute tonsilitis, chorea, diabetes, in certain forms of dyspepsia and diarrhœa. It is often used to prevent the formation of gall-stone. In skin diseases, as psoriasis, it is given with benefit. It is superior to salicylic acid or salicin, being less irritating, but it does not possess the same tonic and stomachic properties. As an antiseptic its solution is used as a wash for the bladder.

Sodii Salicyl Sulphonas.—A white crystalline salt, without any odour and of an acid taste. Used as an antiseptic; inferior to salicylic acid, but superior to salicylate of sodium.

Sodii Santonas—Sodii Santoninas—Sodium Santonate.—A combination of santonine with caustic soda. Colourless crystals or stellate needles. Taste slightly bitter or saline. Turns yellow on exposure to light. Soluble in water (1 in 100), freely soluble in hot glycerine, slightly soluble in syrup. Dose—5 to 10 grs.

Actions and uses.—Anthelmintic. Given in place of santonine.

Sodii Silicas—Solution of sodium silicate. Known as water glass or soluble glass. A viscid solution of the consistence of treacle. Contains caustic soda 10 per cent. and silica 20 per cent. Used as solution or paint.

Actions and uses.—It arrests putrefaction of organic matter. As an antiseptic injection used for gonorrhœa, leucorrhœa, uterine ulcerations, ozœna, cystitis, &c. In erysipelas it has been painted over the affected part with benefit.

Sodii Sulphas, B.P.—Sal Catharticus. Glauber's salt. Sodium Sulphate. Found in nature, and exists in sea-water.

Habitat.—Oudh, India, Duab, North-Western India.

Vernacular: Eng.—*Glauber's salt;* Beng.—*Khari rum, Khâri mâtti;* Hind.—*Kharnamak, Khâra-lou.*

Neutralize the residue left in the manufacture of hydrochloric acid with sodium carbonate, dissolve in water, and evaporate. Another method.—Obtained by the action of sulphuric acid on sodium chloride and other sodium salts. Efflorescent, large, colourless, transparent, oblique prisms, without any odour, and of bitter saline taste

and neutral reaction, soluble in water in less than half its weight, insoluble in alcohol. Dose—½ to 2 drs.; for a single dose ¼ to ½ oz.

An ingredient in the preparation of sodii sulphas exsiccatus.

Sodii Sulphas Effervescens, B.P.—Effervescent Sodium Sulphate.—Contains 50 per cent. of Sodium Sulphate, Sodium Sulphate 5, Sodium Bicarbonate 5, Tartaric Acid 2·7, Citric Acid 1·8. Mix. Dose—2 to 4 drs.

Sodio Magnesii Sulphas Effervescens—Effervescent Sodio Magnesian aperient.—Contains sulphate of sodium and sulphate of magnesium combined. Dose—1 to 2 drs. An agreeable and efficient aperient. Resembles Hunyadi Janos and Pullna waters.

Actions and uses.—Cooling, aperient, hepatic and intestinal stimulant and diuretic. Used in fevers with constipation. Given with sodium bicarbonate in bilious disorders, gout, obesity and diabetes. When effloresced or dried, the dose must be one-half.

Sodii Sulphis, B.P.—Sodium Sulphite.—Saturate the solution of sodium carbonate or other sodium salts with sulphurous acid and crystallize. Colourless, transparent, monoclinic prisms or efflorescent crystals, having a slight sulphurous odour and cooling disagreeable taste, neutral or faintly alkaline in reaction, soluble in water (1 in 4), sparingly soluble in alcohol. The solution gives off sulphurous acid gas on the addition of an acid, but does not deposit sulphur. Dose—5 to 20 grs.

Physiological action.—Alterative, antiseptic and disinfectant; it destroys bacteroid organisms and arrests putrefaction. *Therapeutic uses.*—Used in sarcinæ ventriculi, in enteric fever, in dyspepsia, sore mouth depending upon fermentation in the stomach and intestines, also in vomiting due to similar causes. It has been tried as an internal disinfectant in various specific fevers, chronic mercurial affections, plague, &c., with encouraging results.

Sodii Sulpho-Carbolas, B.P.—Sodium Sulpho-carbolate, Sodium Phenol Parasulphonate.—Heat together equal parts of sulphuric acid and pure carbolic acid, and add water; phenol sulphuric acid is produced. Neutralize the solution with barium carbonate. Barium sulphate is deposited, leaving barium sulpho-carbolate in solution. Add to the filtrate sodium carbonate, evaporate the solution, and

crystallize. Colourless, transparent, rhombic prisms or white crystals, without any odour, and of a cooling saline bitter taste. Soluble in water (1 in 6), in alcohol (1 in 150). Dose—5 to 15 grs.

Physiological action.—Antiseptic and disinfectant. Believed to be a convenient method of administering carbolic acid.

Therapeutic uses.—Used in all specific fevers, such as small-pox, typhus, plague, in typhoid and puerperal fevers and pyæmia. It has been tried in fermentative dyspepsia of phthisis, diphtheria, and cholera, in fermentation of the stomach and intestines; it is used to check vomiting, to remove foul eructations, fœtid urine and foul breath. Externally ½ to 1 per cent. solution is used as an injection in gonorrhœa, putrid wounds, &c.

Sodii Sulpho-Vinas—Sodium Sulpho Vinate, Sodium Sulpho Ethylate, Sodium Ethyl Sulphate. Efflorescent colourless crystals. Tasteless. Dose—2 to 8 drs.

Actions and uses.—Aperient and antisudorific. Given in sweats of phthisis and of other diseases.

Sodium Sulpholeate.—Neutralize with soda the compound produced by the action of sulphuric acid on castor-oil, or any other fixed oil or fat. A fine powder, miscible with water, and is rapidly absorbed by the skin.

Actions and uses.—An ointment base used like vaseline in chronic skin diseases, but being acid it is somewhat irritating to a delicate skin.

Sodii Sulpho-ricinoleas.—To prepare it, treat castor-oil with sulphuric acid at a low temperature, wash with water and ether, and saponify with soda. The preparation is known as oleite, polysolve or solvine. Oleite is a yellowish oily liquid, miscible with alcohol, chloroform, water, &c., readily absorbable by the skin. It readily dissolves sulphur, chrysarobin, iodoform, and alkaloids. Locally it is a soothing emollient.

Soda Tartarata, B.P.—Potassii et Sodii Tartras—Tartrated Soda—Sodium Potassium Tartrate—Tartrate of Potassium and Sodium—Rochelle salt, Siegnette salt.—Neutralize hot solution of sodium carbonate with cream of tartar. Colourless, trimetric prisms, or a white powder, without any odour, and a cooling saline bitter taste, neutral reaction, entirely soluble in water (1 in 2), very soluble in boiling water, almost insoluble in alcohol. Dose—As a diuretic 20 to 60 grs.; as a purgative 2 to 4 drs.

Sodii Tauro-Cholas—Sodium Tauro-Cholate.—Prepared from ox bile or pig's bile. A white amorphous powder. Should be free from sodium glycocholate. Used as keratin-coated pills to prevent solution till it reaches the intestines. Dose—2 to 6 grs.

Actions and uses.—Diuretic. A biliary salt given for defective digestion and to promote assimilation. In hepatic affections it is given with pancreatine. Also given in gout, gouty obesity and dyspepsia.

Sodii Telluras—Sodium Tellurate.—Dose—$\frac{1}{4}$ to $\frac{1}{2}$ gr. An intestinal irritant. A powerful antisudorific. Given in night sweating of phthisis. It gives tellurium smell to the breath. Often causes diarrhœa in phthisical cases.

Sodii Valerianas—Sodium Valerionate.—

Characters.—A dry white mass, not alkaline ; soluble in rectifie spirit. Soluble in water (1 in 2).

Dose—1 to 5 grs.

Actions and uses.—Same as Valerian.

Lithium.—It never occurs in nature in its pure state, but exists mostly in the inorganic kingdom, forming salts in combination with silica as lepidolite, spodumene ; as chloride in soils and spring water ; as carbonate in ashes of plants. It is the lightest solid body known. It burns like potassium and sodium when thrown upon water.

Lithii Benzoas—Lithium Benzoate.—Add bezonic acid to a hot solution of lithium carbonate, evaporate and crystallize. A light deliquescent powder or shining crystalline scales, of a faint odour of benzoic acid and cooling sweetish taste. Soluble in water (1 in 4). Contains 95 per cent. of benzoic acid. Dose—2 to 20 grs.

Actions and uses.—Diuretic and antilithic. Used in gout, calculous disorders, rheumatism, &c.

Lithii Bromidum—Lithium Bromide.

Heat together solutions of ferrous bromide and lithium carbonate, evaporate and crystallize, or dissolve lithium carbonate in hydrobromic acid. Deliquescent white granules, of a sharp bitter taste, without any odour ; very freely soluble in water and alcohol. Contains more bromine than potassium bromide. Dose—5 to 15 grs.

Actions and uses.—Hypnotic and sedative. Contains the greatest amount of bromine, and is therefore the most powerful and the best

hypnotic of the four alkaline bromides. Used for epilepsy and also in Bright's disease, muscular rheumatism, myalgia, and uric acid diathesis.

Lithii Carbonas, B.P.—Lithium Carbonate.—Obtained by the action of ammonium carbonate on lithium chloride or on native lithium silicate. A white powder or minute crystalline scales, without any odour, of an alkaline taste and alkaline reaction; slightly soluble in cold water (1 in 70), insoluble in alcohol. Dissolves with effervescence in hydrochloric acid. Communicates crimson colour to the flame. Dose—2 to 5 grs.

Preparation.—Liquor lithii carbonas effervescens, B.P. (10 grs. to pint). Ærated lithia water. Contains lithia carbonate dissolved in water, charged with carbonic acid gas.

Physiological action.—Antacid and strongly diuretic, solvent and lithontriptic, having well-marked alkaline influence on the urine. It has low atomic weight; hence its saturating power is greater than that of any other alkaline metals, and hence more alkali can be administered with lithium salts than with those of potassium, sodium or ammonium. *Therapeutic uses.*—Given in uric acid and gouty diathesis and to dissolve uric acid deposits in joints. It is an useful diuretic in cases of acid urine. Of late, effervescent lithia water (5 grs.) with arsenate of soda $\frac{1}{20}$ grs. is given in diabetes. It is applied locally to gouty joints and other gouty deposits to dissolve uric acid. It is also useful for indigestion and in rheumatism in obese subjects.

Lithii Citras, B.P.—Lithium Citrate.—Add citric acid to an aqueous solution of lithium carbonate to saturation, evaporate and crystallize. A deliquescent white amorphous powder, without any odour, and of cooling alkaline taste, soluble in water (1 in 2); heated to redness it blackens and evolves inflammable gases. Dose—5 to 10 grs.

Lithii Citras Effervescens, B.P.—Effervescent lithium citrate. —It contains sodium bicarbonate 5·8 parts, tartaric acid 3·1 parts, citric acid 2·1 parts, and lithium citrate 0·5 parts. Small granular powder, soluble in water. Dose—60 to 120 grs.

Physiological action.—It is a diuretic and solvent, but more soluble and less irritating in the stomach than lithium carbonate. In the organism lithium citrate is decomposed, citric acid being oxidized and the lithium carbonate formed. *Therapeutic uses.*—Given in dyspepsia

with acid urine. It is the most convenient way of administering lithium salts.

Lithii Guaiacas—Lithium Guaiacate.—Digest guaiacum resin in an aqueous solution of lithia, and evaporate. Contains lithia (1 to 3). Dose—5 grs.

Actions and uses.—Given in chronic gout and rheumatism.

Lithii Glycerophosphas.—A white amorphous powder, soluble in water. Dose—3 to 8 grs.

Lithii Hippuras—Lithium Hippurate.—Small white crystals, soluble in water. Dose—5 to 20 grs.

Actions and uses.—Lithontriptic. Solvent of lithates. Given in gout and rheumatism.

Lithii Iodidi—Lithium Iodide.—A white powder, soluble in water. Dose—1 to 5 grs.

Actions and uses.—Antisyphilitic and antilithic. Useful in the treatment of gout; also given in dyspepsia, eczema, and in painful syphilitic affections.

Lithii Salicylas—Lithium Salicylate.—A white deliquescent powder of a sweetish taste and without odour, soluble in water (1 in 1). One drachm contains 2·75 grs. of lithium. Dose—5 to 20 grs.

Preparation.—Granular effervescent lithium salicylate (1 in 30). Dose—1 to 2 drs.

Actions and uses.—Antirheumatic, solvent and diuretic; better than salicylate of sodium, being less irritating to the stomach. Given for gout and rheumatism.

Lithium Sozoiodol—Lithium Di-iodo Paraphenol Sulphonate. —It contains iodine, phenol and sulphur with lithium carbonate in combination. White plates, soluble in water.

Actions and uses.—Antiseptic. Used as dusting powder. Similar in properties to iodoform.

Lithii Tartras Acidus—Lithium Acid Tartrate.—A fine white powder or crystals. Dose—5 to 20 grs.

Actions and uses.—Given in gout and rheumatism.

ALKALINE EARTHS.

These are mineral products containing magnesium, calcium, barium and strontium. They go to form with metalloids a group of compound salts.

Magnesium.—Never found free in nature. Occurs abundantly in the mineral kingdom as compound salts, in salt mines, caves, sea and spring waters, as chlorides and sulphates ; in mountain ranges as magnesium limestone, carbonates of magnesium and calcium or dolomite ; as mineral talc, asbestos, soap stone, &c., it is found in various earths, and occurs as silicate or in combination with silica or other metals. Magnesium also occurs in the bodies of plants and animals, in solids and fluids, especially the urine, as carbonate and phosphate combined with organic acids. Obtained by the action of metallic sodium on magnesium chloride, or on the double chlorides of magnesium and sodium or of potassium and magnesium. A brilliant silvery white metal. When burnt it produces a powerful light with strong actinic rays.

Liquor Magnesii Boratis.

Magnesium carbonate and boric acid dissolved in boiling water. Contains boric acid (1 in 6). It is said to be the composition of antifungin.

Actions and uses.—Locally used as a paint in diphtheria.

Magnesii Boro Citras—Magnesium Boro Citrate.—Obtained by mixing together borax 2, magnesii carbonas 1, and citric acid 2. A white powder or scales, soluble in water. Dose—15 to 30 grs.

Preparation.—A compound powder.—Boracite. It contains magnesii boro citras 1 with sugar 2. Dose—60 grs.

Actions and uses.—Antilithic and urinary antiseptic. Given internally in uric acid, gravel, gout, rheumatism, &c. Boracite is given to sterilize the urine before operation.

Magnesia Levis, B.P.—Light magnesium oxide. Light magnesia. Light calcined magnesia.—Heat light magnesium carbonate to a dull red-heat to expel nearly all carbonic acid. A fine light white powder without any odour and of slight alkaline or earthy taste, soluble in diluted acids, insoluble in water and in alcohol. Dose—5 to 60 grs.

Preparation.—Pulvis rhei compositus, B.P. (2 in 3).

Actions and uses.—Antacid, laxative and antilithic. It is given in sick headache, heartburn, pyrosis, flatulent colic and to neutralize the acidity of the stomach and intestines. Absorbed into the blood it produces alkaline urine, hence useful in gout, gravel and uric acid diathesis. It acts as a mild purgative, especially in children with a tendency to constipation. Externally as a dusting powder it is used for ulcers, abraded surfaces, &c. It is sometimes used as an ingredient in tooth powders.

Magnesia Ponderosa, B.P.—Heavy Magnesia, Heavy Magnesium Oxide, Heavy Calcined Magnesia, Magnesia Usta.—Expose heavy magnesium carbonate to a dull red heat. A dense white powder without any odour, and of an earthy taste. It is three and-a-half times heavier than light magnesia, almost insoluble in water and insoluble in alcohol. Dose—5 to 60 grs.

Actions and uses.—Antacid, laxative, and antilithic. Given in acidity of the stomach and intestines, in diarrhœa of children and in dyspepsia, in gouty and rheumatic subjects, and in uric acid diathesis. It produces alkaline urine, and hence is very beneficial.

Magnesii Carbonas Levis, B.P.—Light Magnesium Carbonate. Magnesia Alba-carbonica.—Boil a mixture of magnesium sulphate 10 and sodium carbonate 12. Filter, wash and dry the precipitate. A light white powder, partly amorphous and partly crystalline, insoluble in water and alcohol. Dose—5 to 60 grs.

Actions and uses.—Antacid, antilithic and laxative. Used in gout, acid urine, and in acidity of the stomach and intestines. Magnesia and its carboantes are used as antidotes in poisoning by strong acids, arsenic, cupric, mercuric and phosphorus salts.

Magnesii Carbonas Ponderosus, B.P.—Heavy Magnesium Carbonate. Heavy Carbonate of Magnesia.—Exists in native state as magnesium limestones. For medicinal purposes mix together boiling solutions of sulphate of magnesium and carbonate of sodium. Filter and dry. A white heavy granular powder, without any odour, and of an earthy taste, almost insoluble in water and alcohol, soluble in dilute mineral acids. Dose—5 to 60 grs.

Preparation.—Liquor Magnesii Carbonatis, B.P. Fluid magnesia (each fluid ounce contains about 10 grains of carbonate of magnesium). Dose—1 to 2 fluid ozs. *Mistura Alba* contains magnesium carbonate 10 grains, magnesium sulphate 2 drachms, peppermint water 1 fluid ounce. Dose—1 oz. Antacid, antilithic, laxative. Used in uric acid diathesis, gout, acidity of the stomach and intestines.

Magnesii Glycero Phosphas.—A white amorphous powder, soluble in water. Dose—3 to 10 grs.

Magnesii Citras Effervescens—Effervescent Magnesium Citrate. —Take magnesium carbonate 10, citric acid 46, sodium bicarbonate 34, sugar 8, and water 4, alcohol q.s. Mix and granulate. Deliquescent coarse granular powder, taste acid, reaction acid. Soluble in water, insoluble in alcohol. Dose 1 to 3 drs.

Preparation.—Liquor magnesii citratis. Solution of magnesium citrate.—Contains magnesium carbonate 100 grs., citric acid 200 grs., potassium bicarbonate 40 grs., syrup of lemons ½ oz., water 10 ozs. Dose—5 to 10 ozs. Given as a cathartic.

Mistura Magnesii et Asafetidæ—Magnesia and asafœtida carminative mixture.—Contains magnesii carbonate 5, tincture of asafetida 7, tincture of opium 1, sugar 10, water 100. Dose—½ to 2 drs. Laxative and antacid. In small doses it is given in the beginning of diarrhœa and in cholera. Very often given to remove any irritating matter or obstruction in the intestines. In febrile and inflammatory diseases, in renal and cardiac dropsy, in ascites due to portal obstruction or to increased cerebral congestion, in constipation due to defective intestinal secretions or to lead poisoning, its use is very valuable. It should be given with senna to increase intestinal peristalsis.

Magnesii Sulphas, B.P.—Magnesium Sulphate, Epsom Salt. —It is a constituent of sea-water, of many mineral springs as those of Epsom. Obtained by treating dolomite with sulphuric acid, or by purifying the native magnesium sulphate. Fine white needle-like crystals or small rhombic prisms, without any odour, of a cooling saline bitter taste and neutral reaction; soluble in water (1 in 1), insoluble in alcohol. Dose—¼ to ½ oz.

Preparations.—Infusum sennæ compositum. Dose—½ to 2 ozs.; Magnesii Sulphas Effervescens, B.P. Effervescent Epsom Salt. Contains Sulphate of Magnesia 50 per cent., or contains Magnesium Sulphate 50 grs., Sodium Bicarbonate 36 grs., Tartaric Acid 19 grs., Citric Acid 12½ grs., Refined Sugar 10½ grs. Dose—½ to 1 oz.; Enema magnesii sulphatis, enema catharticus, sulphatis of magnesia, and olive-oil each one ounce, mucilage of starch 15 fluid ozs.

Physiological action.—Magnesia and the carbonates are refrigerant antacids, diuretic and mild saline laxatives. When taken into the stomach they neutralize the free acids and form laxative salts. When taken in large doses and for a long time they become

hydrated and form concretions in the intestines. The citrate and the sulphate are saline purgatives, rapidly producing copious discharges from the intestines with very little griping or irritation, and unaccompanied by depression. When given, they should be largely diluted with water.

Magnesii Sulphis—Magnesium Sulphite.—Used as tablets, 5 grs. each. Dose—10 to 30 grs. Used internally as gargle and insufflation, and in diphtheria.

CALCIUM.

A metallic base of the alkaline earth group. Never met with in a free state. Occurs in all the three kingdoms in nature. It is a light yellow ductile metal, a basis of all calcareous and cretaceous substances. It is found in combinaton with metalloids and metals. As carbonates in calcareous spar, chalk, rock, limestone, argentine, marble, shells of eggs, mollusca, &c. As acid carbonate in water, as sulphate in alabaster and gypsum. As phosphate in hard shells and soft organic tissues of the animal body, such as nerves, muscles, bones, &c. As fluoride in fluorspar, as silicate in rocks. It is found in the vegetable kingdom in combination with vegetable acids.

Calcspar is used medicinally in India. The natives call it white antimony from its rhombohedral fracture resembling that of galena, which is employed in lieu of antimony. Used as a collyrium for the eyes like sulphide of antimony.

Calcii Boras—Calcium Borate.—A white powder. Soluble in calcium chloride and borax solutions. Dose—2 grs.

Actions and uses.—Astringent. Given in sore mouth and also internally in diarrhœa.

Calcii Bromidum—Calcium Bromide.—Add bromine to hydrated calcium. Evaporate. Then add charcoal and apply heat, or mix ferrous bromide with calcium carbonate in solution, and evaporate. White granules, highly deliquescent, of a sharp saline taste, soluble in water (1 in 0·7) and alcohol (1 in 1). Dose—10 to 30 grs. or more.

Actions and uses.—Nervine sedative. Given in epilepsy, hysteria, &c.

Calcii Carbidum—Calcium Carbide.—In solid crystalline masses, resembling pieces of coal. Brought in contact with water or moisture, it evolves acetylene gas.

Actions and uses.—Escharotic. Used in the treatment of cancer of the uterus and vagina, also of uterine epithelioma. A piece of the size of a small almond is introduced into the cavity of the uterus and vagina and plugged with iodoform gauze.

Calcium Carbonate—Carbonate of lime, chalk.—It consists of infinitesimal shells composed mostly of carbonate of lime with magnesia, aluminæ, silica, iron and organic matter.

Vernacular.—Arab.—*Kits ;* Burm.—*H. Tounghpyu ;* Eng.—*Chalk, Marble, Quicklime ;* Hind.—*Vilatti chuna, Karri matti ;* Malyal.—*Kapur ingris ;* Pers.—*Gil safed ;* Tam.—*Simi chunambu.*

It is often contaminated with iron oxide, clay, organic matter, &c., and forms rocky beds. It occurs in nature as limestone, white marble, &c. A native friable calcium carbonate otherwise known as creta is used in producing carbonic acid gas.

Calcii Carbonas Præcipitatus, B.P.—Precipitated calcium carbonate, precipitated chalk.—Mix together boiling solutions of calcium chloride and sodium carbonate. A fine white powder without any odour or taste, soluble in mineral acids or acetic acid, nearly insoluble in water and alcohol. It is an ingredient in trochiscus bismuthi compositus, B.P. Dose—10 to 60 grs.

Actions and uses.—A mild astringent and antacid. Given in dyspepsia, hyperacidity of the stomach, &c.

Creta Præparata, B.P.—Prepared chalk. A native friable carbonate of lime, freed from impurities by elutriation. The chalk or whiting is well powdered, washed with water, decanted, and allowed to subside. A white amorphous powder without any taste or odour, nearly insoluble in water and alcohol. Dose—10 to 60 grs. Used also as a dusting powder.

Preparations.—Hydrargyrum cum creta, B.P. Dose—1 to 5 grs. Mistura Cretæ, B.P. Chalk mixture. Contains prepared chalk ½ oz., tragacanth in powder 15 grs., refined sugar ½ oz., cinnamon water 8 ozs. Dose—½ to 1 oz. Pulvis Cretæ Aromaticus, B.P.—Aromatic chalk powder. Confectio Aromatica.—Powdered cinnamon bark 4 drs., powdered nutmeg 3 drs., powdered cloves 1½ drs., powdered cardamom seeds 1 dr., refined sugar 25 drs., prepared chalk 11 drs. Dose—10 to 60 grs. Pulvis Cretæ Aromaticus cum Opio, B.P.—Aromatic chalk powder with opium (1 grain of opium in 40). Dose—10 to 40 grs. Trochisci Cretæ.—Troches of chalk. Contains chalk 25, spirit of nutmeg 3, acacia 7, and sugar 40. 4 grs. in each.

Actions and uses.—Antacid, mild astringent and absorbent. Used in diarrhœa and dyspepsia with acidity in children and infants; also in bronchitis with colliquative sweats and diarrhœa. It forms a basis or a principal ingredient in all tooth powders and some toilet powders. As a dusting powder it is used in burns, excoriations of the skin, ulcers accompanied by acrid irritating discharges. The surface should be covered with linseed poultices.

Calcii Chloridum, B.P.—Calcium Chloride, Calcium Chloratum, Muriate of Lime.—Neutralize hydrochloric acid with marble or calcium carbonate, and evaporate. Very deliquescent white agglutinated masses, without odour, and of a sharp saline taste, soluble in water (1 in 1), in alcohol (1 in 3). Should not be confounded with chlorinated lime. Dose—5 to 15 grs., even up to 30 grs.

Preparation.—Liquor calcii chloridi (1 to 5). Dose—15 to 50 ms.

Physiological action.—A diffusible salt. In large doses acro-narcotic poison. It sets up gastro enteritis, increases the excretion of urea in the urine. In small or moderate doses it is an alterative, stimulant of the lymphatic and glandular systems, and slightly irritant. *Therapeutics.*—Given in strumous diathesis it causes resolution or calcification of tubercles. It is of benefit in wasting diseases as phthisis and in glandular enlargements where cod liver oil and iodine may have failed. In ovarian and other tumours as in uterine fibroids it is of benefit by aiding a process of calcareous degeneration. In sea sickness, in sarcinæ, in chronic skin diseases as eczema, impetigo, acute lobar pneumonia, it is successfully tried. From its property of rendering the blood less prone to fluidity it is used in serotherapy to check inflammation at the seat of inoculation. It is also of service to check bleeding in case of hæmophilia.

Calcii Glycero Phosphas—Calcium Glycero Phosphate.—White powder or crystals, soluble in cold, but insoluble in hot water. Dose—3 to 10 grs. Given hypodermically in 2 to 4 grs. doses.

Actions and uses.—Nervine tonic and aphrodisiac. Given in seminal debility, spermatorrhœa, &c. It improves the general nutrition of the nervous system.

Calcii Hydras, B.P.—Calcium Hydroxide, Calcium Hydrate. Eng.—*Hydrate of lime, Slaked lime*; Malayal.—*Kapur mati.* Add water 1 pint to calcium oxide—recently burnt lime or quicklime 1 lb., till vapour ceases to be disengaged; the residue, on cooling, is slaked lime. The process is termed slaking, and is attended with the

evolution of great heat. It is a soft white powder of a strong alkaline taste and alkaline reaction, soluble in water (1 in 900). The solubility is increased by the addition of sugar; strongly heated, it loses ¼ of its weight of water. Should be kept in a stoppered bottle immediately after preparation.

Liquor Calcis, B.P.—Solution of Lime. Lime water. Obtained by shaking slaked lime with water or by pouring water on recently burnt lime (½ gr. to an ounce). A clean saturated solution of lime without any odour and of a saline taste. Absorbs carbone dioxide from the air and forms a pellicle on the surface of carbonate of lime. Dose—1 to 4 fluid ounces.

Calcii Saccharas, Calcium Bi-Saccharate.—A white crystalline powder, soluble in water. Dose—8 to 30 grs. In colourless tufts, soluble in water.

Liquor Calcis Saccharatus, B.P.—Saccharated solution of lime. Contains calcium oxide 8 grs. to 1 oz. Dose—20 to 60 ms. Used as an antacid for dyspepsia and flatulence.

Linimentum Calcis, B.P.—Carron Oil, Lime liniment (1 in 2).

Physiological action.—Burnt lime or quicklime has a great affinity for water. Locally it is an irritant and a superficial caustic, decomposing and destroying organic matter. Its fumes set up inflammation of the eyes or nose. If swallowed or inhaled, it produces local inflammation and ulceration. In a diluted form liquor calcis is astringent, sedative, absorbent, and an antacid. Calcium salts improve the muscular tissue of the heart or any other muscles. The calcium phosphates are useful for the nutrition of bones, cartilages, tendons, &c. When deficient in the blood, they lead to disease of the bone and lymphatics, and even to emaciation. When in excess, they lead to goitre.

Therapeutic uses.—Lime powder is only used as a masticatory in India. Locally combined with caustic potash (Vienna paste) it is used as an escharotic in opening hepatic abscesses. Mixed with sulphuret of arsenic it is used as a depilatory by tanners to remove hairs from hides and by women to remove hairs from over the pubes. Mixed with ammonium chloride it is used to destroy nævi, warts, &c. Mixed with honey it is used as a mild counter-irritant for rheumatic joints and for headache. In the form of linimentum calcis, slaked lime is used as a desiccant over burns and scalds, and as a cooling application with glycerine to the face in small-pox, to the skin diseases in psoriasis, eczema, &c. The vapour is used as inhalation in diphtheria. Liquor calcis or solution of lime is antacid, alterative and

astringent. As antacid it neutralizes the acidity of the stomach, and is given in acid dyspepsia, muco enteritis, typhoid fever, and to arrest vomiting due to chronic gastric ulcers. In diarrhœa in children, milk with lime water is very efficacious. As an enema, lime water is given against thread worms, as a wash for aphthæ and as a lotion for chapped and cracked nipples, also for mucous or purulent discharges from wounds, ulcers, &c. As an antiseptic, lime is used to disinfect sick rooms, fœtid stools, cesspools, sewers, &c.

Calx Chlorinata, B.P.—Chlorinated Lime, Chlorated Lime, Calcium Hypochlorite, Chloride of Lime, Bleaching Powder. It is a compound of hypochlorite and chloride of calcium. To obtain it, pass chlorine gas over slaked lime until absorption ceases. A white or dull white granular powder, with odour of chlorine gas, of an acrid taste, partly soluble in water or alcohol. It gives off chlorine gas when dissolved in hydrochloric acid. Contains 33 per cent. of available chlorine. Dose—1 to 5 grs. Used as a solution 1 to 3 per cent., as a mouth wash, lotion, or ointment.

Preparation.—Liquor Calcis Chlorinatæ, B.P.—Liquor calcis chloratæ, solution of chlorinated lime (1 in 10). It contains 3 per cent. of chlorine gas. Dose—3 to 30 ms. Vapour Chlori.—Add water to the powdered chlorinated lime. Liquor Sodæ Chlorinatæ, B.P.—Solution of chlorinated soda. To prepare it, take sodium carbonate 24 oz., chlorinated lime 16 ozs., water to make 1 gallon. It is a clear pale greenish liquid of a disagreeable alkaline taste and of a chlorine odour. Used as gargle or injection. Dose—10 to 20 ms.

Actions and uses.—Desiccant, stimulant, antiseptic, deodorant, disinfectant, rarely used internally. Locally used for ulcers, burns, skin troubles, itch, putrid sore throat, ulcerated gums, &c. Liquor sodæ chlorinatæ is sometimes used internally as a stimulant, antiseptic or resolvent. It is given in typhus, scarlatina, dyspepsia, dysentery, fevers with fœtid breath, fœtid urine, and fœtid stools; also in glandular enlargements, syphilis, ozœna, carbuncles, tinea capitis, and herpetic affections. The vapour is used in bronchitis and hepatic affections.

Calcii Hypophosphis, B.P.—Calcium Hypophospite. Hypophosphite of lime.

Boil phosphorus with calcium hydroxide in water and pass carbonic acid in the solution. The excess of lime is precipitated. Filter the remaining solution, evaporate, and crystallize. Transparent prisms or white crystalline powder with a pearly lustre, without any odour,

and of a nauseous taste, soluble in water (1 in 8), insoluble in alcohol. Dose—3 to 10 grs. Heated to redness it evolves inflammable hydrogen phospide and hydrogen.

Preparation.—Syrupus calcii hypophosphitis one grain in each drachm. Dose—1 to 4 drs.

Syrupus Calcii Manganesii et Potassii Hypophosphitum.—Contains 2 grs. hypophosphite of calcium, 1 gr. each potassium and manganese hypophosphites, and syrup 1 dr. Dose—½ to 1 dr.

Actions and uses.—Nervine stimulant, and tonic. Largely used in night sweats of phthisis, in scrofula, chlorosis, rickets, caries of bone, defective nutrition, also in hectic fever.

Calx Iodinata—Iodinated lime. This is a compound of iodine and lime. To obtain it, pass iodine vapour over slaked lime till absorption ceases. A granular powder, of the odour of iodine.

Liquor Calcis Iodinatæ—Solution of a compound of iodine and lime. A solution similar to Liquor Calcis Chlorinatæ. Contains 16 grs. of iodine to 1 oz. A watery liquid. On addition of an acid, iodine is set free. Dose—5 to 20 ms.

Actions and uses.—Germicidal, disinfectant and antiseptic. Similar to those of iodine. Externally as a gargle it is used diluted with water.

Remarks.—With acid urine it gives a red colour. With alkaline urihe a white precipitate of phosphate of calcium.

Calcii Hippuras—Calcium Hippurate.—Add hippuric acid to a solution of calcium carbonate. White crystals, soluble in water (1 in 30). Dose—5 to 20 grs.

Actions and uses.—Lithontriptic and solvent for urates. Given in combination with phosphate of soda in cystitis, gravel, rachitis, scrofula, liver diseases, gout, and diabetes. Not decomposed by passing through the system.

Calcii Lactas.—A white crystalline powder, soluble in water (1 in 60). Dose—1 to 5 grs. Very easily assimilated into the system.

Calcii Lactophosphas.—Calcium Lactophosphate.—To prepare it, add gradually precipitated calcium carbonate 5 to lactic acid 60. Make a solution with water, then add concentrated phosphoric acid 46, and tirturate.

Preparation.—Syrupus Calcii Lactophosphatis, B.P.—Contains Calcii Lactophosphate, orange flower water, and sugar. Dose—½ to 1 dr.

Actions and uses.—Alterative and stomachic tonic. Given in dyspepsia and vomiting, and to pregnant women during gestation. Chiefly indicated in ricketty and scrofulous conditions in children and in convalescence from long or chronic illness. It is very beneficial in low form of fevers, in croup, general cachexia, &c.

Syrupus Calcii et Ferri Lactophosphatum.—Each drachm of the syrup contains calcii lactophosphate 1 gr. and ferrum lactate 1 gr. Dose—½ to 1 dr.

Calx, B.P.—Calcium oxide.

Vernacular: Eng.—*Quicklime, Caustic lime, Burnt lime;* Arab.—*Kalo Ahag;* Beng.—*Kali-ka chuna;* Burm.—*H'tonphin;* Cing.—*Hunnoo;* Guz.—*Kali chuno, Kali chuna;* Hind.—*Kali-ka chuna; Miday—Tur;* Pers.—*Nurch;* Sans.—*Sudha Kshara, Churna;* Tam.—*Chunambu.*

Is alkaline earth, mixed with some impurities. To obtain it, calcine or burn white marble, oyster shell, limestone or chalk (purest variety of calcium carbonate), when carbonic acid gas is expelled, leaving calcium oxide behind, met with in light lumps or grayish white compact masses which readily absorb moisture. On the addition of water less than half the weight of lime, the latter swells and falls into a white bulky powder with much heat. It is then known as calcium hydrate or slaked lime. It is without any odour and of a pungent sharp (caustic) taste and alkaline reaction. Soluble in water (1 in 750), less so in boiling water. Insoluble in alcohol. It is not used internally except in solution. It is a constituent of Potassa cum calc.

Calcii Permanganas—Monol. A deliquescent salt. Used as an antiseptic for mouth-wash.

Calcii Phosphas, B.P.—Calcium Phosphate, Precipitated Calcium Phosphate.

Dissolve bone ash in dilute hydrochloric acid, add the solution of ammonia and wash the precipitate, and dry; or mix together calcium chloride and sodium phosphate.

A white amorphous powder, without any taste or odour. Insoluble in water and alcohol. Dose—5 to 15 grs.

An ingredient in pulvis antimonialis, B.P.

Calcii Salicylas—Calcium Salicylate.—Neutralize solution of calcium carbonate with salicylic acid. A white crystalline powder without any odour and of a sweetish taste, soluble in acidulated water. Dose—2 to 20 grs.

Actions and uses.—Antiseptic and astringent. It is used in the treatment of catarrhal diarrhœa and in uric acid diathesis if complicated with diarrhœa.

Fossil Encrinite.—Contains mostly silicate of lime.

Habitat.—Peshawar.

Vernacular.—Arab.—*Hojar-ul-ukah;* Bomb.—*Sanga Yahuda;* Guz.—*Hajar-ul yohndi;* Hind.—*Sanga ya huda;* Pers.—*Sang-e-yahuda.*

Sang—a stone. The word *sang* is used as a prefix to designate mineral earths, stones, mineral fossils, gems, &c. *Hajar*—a stone—any stone; *Ukah*—eagle; *Hajral-ul-ukah*—eagle-stone. (A stone found in eagles' nests, on guilandina tree, &c.)

A petrified fossil stone, radiated, oblong, obtusely pointed, and lily-shaped, about ½ to 1½ inch long. Surface ribbed longitudinally; each rib is tuberculated, colour dirty gray, traversed by dark brown furrows externally and greenish white within. Dose—5 to 15 grs. Erroneously supposed to be a star fish.

Preparation.—*Sang-i-yahud bhashma.* The stone is several times soaked in lemon juice and incinerated.

Actions and uses.—Cooling and demulcent. Given in gonorrhœa, also to check vomiting and in chyloserous urine.

Sang-i-yashin.—Silicate and sulphate of lime. Bomb.; Hind.; Pers.—*Sang-e-Isama.* Concretions. Occur in marble-like pieces of the shape of closed books and of various sizes, and a dark-brown colour. The pieces, when polished, are smooth, their surfaces mottled with light red spots. When cut, the interior is of a deep gray colour, and looks as if sprinkled with particles of mica. Dose—5 to 10 grs.

Preparation.—*Sang-e-yasani bhasm.*

Actions and uses.—Cooling and demulcent. Given in retention of urine and in other diseases of the urinary organs. Externally it lessens irritation in itch and other chronic skin diseases.

Calcii Sulphas Exsiccatus—Dry sulphate of calcium. Snowy gypsum.

Habitat.—Madura, Bangalore, Hyderabad, &c.

Vernacular.—Eng.—*Dry Gypsum, Plaster of Paris, Alabaster, Satin Spar;* Guz.—*Gabhan Bhasma;* Mah.—*Godante Haratal;* Sindhi.—*Karichiri, Kulnar, Karpoora, Silasit.*

Godante (*Go* cow and *dante* teeth).—It means cow's teeth ; hartala, from its resemblance in colour to sulphuret of arsenic. This drug bears a resemblance to cow's teeth, and in colour and appearance to hartala. *Alabaster.*—A variety of gypsum reserved for ornamental purposes.

These concretions are obtained from coral, cuttle-fish bone, egg-shell, and oyster-shells. They chiefly contain calcium carbonate, phosphate and sulphate of calcium and other metallic salts obtained by heating native sulphate of calcium. Occurs as fine white powder without taste or odour. Contains .5 per cent. of water. Exposed to air, it attracts water. When mixed with half its weight of water, it forms a smooth paste, which rapidly hardens. It is soluble in water (1 in 410). Dose—10 to 30 grs.

Preparation.—Calx sulphurata.

Actions and uses.—Plaster of Paris is used to retain broken bones in a fixed position in fracture of the limbs and ribs, in deformities of knees and ankle joints, and in certain amputations, and in lateral curvatures of the spine. Dentists sometimes use it for taking moulds. In native practice a paste of *gabhana bhasma* made with curd is locally applied to painful and swollen parts. Internally it is used as an astringent and antacid, in menorrhagia, metrorhagia and acidity of the stomach.

Calcii Sulphophenas.——Prepared by the action of sulpho-carbolic acid on calcium carbonate. A white powder without any odour and of astringent bitter taste. Freely soluble in water and alcohol. Used as aqueous solution (1 in 100).

Actions and uses.—Intestinal antiseptic and astringent. Given in diarrhœa and cholera.

Sang-i-Sar-i-mahi.—A variety of limestone.

Sang-e-sari mahi from *sanga* "a stone," *sar* "a head," and *mahi* a "fish". This is in allusion to a belief among the natives that this stone is found in the head of a fish.

Habitat.—Delhi.—A small fossil shell or concretion, resembling in colour, form and appearance a human incisor tooth. Externally shining, glabrous and of a brownish white colour, both surfaces convex. Used as *sang-i-sira-mâhi bhasm.*

Actions and uses.—Similar to those of *sang-e-isama.* Used also as an aphrodisiac in seminal debility.

Calx Sulphurata, B.P.—Sulphurated lime, calcium sulphide. Canton's phosphorus. Obtained by heating together native calcium sulphate and charcoal to redness. Contains 50 per cent. of calcium mono-sulphide with calcium sulphate and carbon. A grayish white or yellowish powder of a nauseous alkaline taste and odour of sulphuretted hydrogen, alkaline reaction, slightly soluble in water and alcohol. Dose—$\frac{1}{4}$ to 1 gr.

Preparations.—Sulphurous bath. Sulphurated lime, diluted acid and water.

Pilula Calcis Sulphurata.—Sulphide of calcium pills. Contains sulphurated lime, milk, sugar and gum (from $\frac{1}{10}$ to 1 gr. in each).

Syrupus Sulphatum.—A solution of sulphate of quinine $2\frac{1}{2}$, sulphate of beberine 1 gr., sulphate of iron $2\frac{1}{2}$, potassium sulphate 8 grs., sodium sulphate 8 grs., diluted sulphuric acid 5 ms., glycerine 12 ms., water 48 ms., syrup 4 drs., and spirit of chloroform 1 m. Dose—4 to 6 fld. drs.

Lotio Calcii Sulphurati.—Slaked lime 4, sublimed sulphur 4, water 35. Boil, evaporate and filter. Holds in solution calcium penta sulphide with oxysulphide. A clear yellow liquid. Used as a paint in the cure of itch.

Sulphurated Lime.—Depilatory. Contains milk of lime saturated with sulphuretted hydrogen.

Physiological action.—Sulphide of calcium and sulphur in any form are useful agents in germ diseases. The sulphides are useful to check suppurative process in a marked degree. *Therapeutic uses.*—Given in boils, carbuncles, acne, suppurating glands in the neck, scrofulous sores, &c. It has the reputation of hastening maturation and preventing the formation of fresh boils, &c. Also used in diabetes and to lessen the irritability of the skin. It is regarded as a specific in scrofula and elephantiasis. In influenza, diphtheria and croup, and in diabetes it is invaluable. In strumous ophthalmia, in periostitis and alveolar abscesses it is very useful. Syrupus sulphatum is useful in boils.

Remarks.—It possesses properties allied to the sulphurous springs of Vajrabai (Bombay), Harrogate, Baregas, Gilsland, &c.

BARIUM.

Barium, from baros weight, so called owing to the high specific gravity of heavy spar. Rarely found in nature. Occurs chiefly as sulphate (heavy spar) and carbonate. The metal is of a silvery gray colour, rapidly oxidises on exposure to the air, and decomposes water. Its salts are generally poisonous. Some of the salts are alterative, diuretic and cardiac tonic. Used in scrofula and skin affections.

Barii Chloridum—Barium Chloride.—Dissolve barium carbonate in dilute hydrochloric acid, evaporate, and crystallize. Translucent, rhombic tablets or plates, colourless, of a bitter saltish taste. Soluble in water (1 in 3), sparingly so in alcohol. Dose—$\frac{1}{12}$ to $\frac{1}{4}$ gr. *Preparation.*—Liquor barii chloridi (1 to 3).

Actions and uses.—Cardiac tonic and alterative. Given in atheromatous degenerations, syphilis, scrofula, &c. Externally as an eye-wash. Mostly used in chemical test.

Barium Iodide.—Highly deliquescent, white coloured crystals, which on exposure to the air decompose and become red. Soluble in water and alcohol. Dose—$\frac{1}{12}$ to $\frac{1}{4}$ gr.

Actions and uses.—Alterative. Given in scrofulous affections and morbid degenerative growths. Used locally as an application to enlarged lymphatic glands. Applied in eczema mixed with petroleum.

Barii Dioxidum.—Barium Dioxide, Barium Peroxide.—Pass oxygen gas or air over barium oxide or barium hydroxide, heated to redness. A heavy grayish white or yellow amorphous coarse powder, without any odour or taste. It slowly absorbs carbonic acid and oxygen from the air. Used in the preparation of liquor hydrogenii peroxidi, B.P.

Barii Sulphas, Barium Sulphate.—A heavy, lamellar, white or flesh-coloured native mineral. When heated, it decrepitates and forms barium sulphide (a white enamel). Insoluble in usual solvents. Soluble in dilute hydrochloric acid. It is artificially prepared from barium sulphide by precipitating the sulphide solution with sulphuric acid.

Barium Sulphide.—Amorphous light yellow powder. Soluble in water. Dose—$\frac{1}{4}$ to 1 gr. Used as pills. Barium sulphide depilatory—Contains barium sulphide 1 and starch 3.

Actions and uses.—Alterative, diuretic and cardiac tonic. Used in cutaneous affections, scrofula and syphilis. To the depilatory zinc oxide is often added.

Strontium.—An alkaline earth. Found in nature as strontianite. A malleable metal, of a yellow colour, harder than lead. Exposed to the air, it oxidizes readily and forms salts with metalloid and metals.

Strontium Arsenite.—Fuse together arsenious acid and strontium carbonate. Dissolve the product in water and crystallize. A white powder, almost insoluble in water. Dose—$\frac{1}{50}$ to $\frac{1}{8}$ of a gr.

Actions and uses.—Alterative and tonic. Used in chronic skin affections, malaria fevers, &c.

Strontii Bromidum—Strontium Bromide.—Dissolve strontium carbonate in hydrobromic acid to neutralization, evaporate and crystallize. Deliquescent, colourless, transparent, hexagonal crystals, without any odour, and of bitter saline taste; soluble in water and alcohol, insoluble in ether. Dose—10 to 30 grs.

Physiological action.—This salt is better borne than potassium bromide. It prevents acetic and lactic fermentations and the formation of gases of decomposition. In small doses they are nervine sedative. They are soon eliminated by the kidneys.

Therapeutic uses.—Given in rheumatism, gout, epilepsy, hysteria, nervousness, headache, gastric dyspepsia, fermentation, flatulence and vomiting.

Strontii Carbonas.—Strontium Carbonate.—It is prepared by double decomposition of the strontium chloride with sodium carbonate. Dose—5 to 30 grs.

Strontii Iodidum.—Strontium Iodide.—To obtain it, dissolve strontium carbonate in hydro-iodic acid to neutralization, evaporate and crystallize. Deliquescent, colourless, transparent or yellowish powder or plates. Without any odour and bitterish saline taste; sparingly soluble in alcohol, ether, and freely so in water. It turns yellow by exposure to air. Dose—10 to 20 grs.

Actions and uses.—Same as potassium iodide. Alterative and sialagogue. Given in enlarged lymphatic glands, ozœna, lupus, scrofula, asthma, and rheumatism.

Strontii Lactas.—Strontium Lactate.—Dissolve strontium carbonate in lactic acid to neutralization, evaporate and crystallize. A white

granular powder or crystalline nodules, without any odour and of a slightly bitter saline taste ; soluble in alcohol and water (1 in 4). Dose—5 to 30 grs. Anthelmintic, diuretic and tonic. Reliable and harmless. Given in obstinate painful dyspepsia, parenchymatous nephritis, diabetes, albuminuria of pregnancy, gout, rheumatism, worms and chorea. Under its use urates disappear from the urine : should not be given in cases of uræmic poisoning.

Strontii Salicylas—Strontium Salicylate.—Dissolve strontium carbonate in salicylic acid, evaporate and crystallize. Fine white crystals, slightly soluble in water (1 in 20), also soluble in alcohol. Dose—5 to 30 grs. Antirheumatic, diuretic and tonic. Given in rheumatism, chronic gout, chorea, lithæmia, intestinal indigestion, muscular pains and pleurisy. Does not cause gastric disturbance. As an intestinal antiseptic it is given in fœtid stools and is better borne than salol or naphthalin.

The strontium salts are generally harmless, antiseptic to the digestive tract, and anti-putrefactive. They improve the appetite, assist assimilation and nutrition, and increase body weight.

ALUMINIUM.

It is never met with in nature in a free state; found in combination with silicic acid in silicated rocks and forms a great bulk of our earth as basalt, granite, felspar, mica, slate, shale, &c.; as aluminium oxide it exists in sapphire, ruby, emery, corundum, &c. It is a sonorous and ductile metal of a light steel gray colour.

Alumen-alum, B.P.—

Aluminium and potassium sulphate or aluminium and ammonium sulphate. Alum is principally found with peroxide of iron in silajit or in alum earths of Nepaul.

Vernacular.—Arab.—*Shabb, Zaje-abyas ;* Beng.—*Phit kiri ;* Bomb.—*Sambe mani ;* Burm.—*Khin ;* Can.—*Pati kara ;* Cing.—*Sina-karan ;* Duk.—*Phatakri ;* Guz.—*Phatakari ;* Hind.—*Phitkari ;* Madras.—*Paddi carum ;* Mar.—*Turati, Patikar ;* Malay—*Tawas, Patik-karum ;* Pers.—*Shab-i-yemeni, Zake- baoor ;* Sans.—*Sphatika, Puttaki ;* Tam.—*Shina-karam ;* Tel.—*Patti-karamee.*

Treat clay alum, slate alum, or schist with sulphuric acid. To the aluminium sulphate thus formed add potassium sulphate to form double salt (potassium alum) or add ammonium sulphate to form ammonium alum, or roast slate alum or shale (aluminium silicate) with iron sulphide, when the sulphur of the iron sulphide is oxidized and converted into sulphuric acid, leaving aluminium and iron sulphates.

Add water, dissolve out by lixiviation, concentrate the solution, and mix it with potassium chloride. Potassium chloride acts upon iron sulphate, decomposing it into potassium sulphate and chloride of iron, and alum is separated. Alum occurs in large colourless octohedral crystals or thin pearly plates, without any odour and of an acid-sweetish astringent taste; soluble in cold water (1 in 10), boiling water (3 in 1), and freely soluble in glycerine, and insoluble in alcohol. Dose—5 to 10 grs. As an emetic 1 dr. for a child. Used as powder, lotion, injection, spray and gargle.

Alumen Exsiccatum, B.P.—Exsiccated alum, alumen ustumm—Dried potassium alum, burnt alum (100 parts of alum yields 54 parts). Heat potassium alum till aqueous vapour ceases to be given off. A white powder, soluble in cold water (1 in 20) or in boiling water (4 in 3); absorbs moisture on exposure to the air. Used as an escharotic.

Poudre Astringente de Knaup.—A compound powder, containing potash alum 500, ferrous sulphate 500, ammonium chloride 30, zinc sulphate 30, copper oxide 30. The whole to be mixed, fused together and powdered when cool, used as a lotion 1 dr. in 20 ozs. of water. It is a powerful astringent; used locally as a wash for foul ulcers and as a gargle in relaxed throat.

Physiological action.—Astringent, caustic, antiseptic, irritant and purgative. As an astringent it coagulates albumen, contracts muscular fibres, and constringes the capillaries. When put upon the tongue, it gives a peculiar styptic sensation; it increases the flow of saliva at first, but soon diminishes it. When taken into the stomach, it excites muscular contractions and causes constipation. Its action on the mucous surfaces is to arrest secretions. It also checks capillary hæmorrhages. In large doses it is a gastro-intestinal irritant. Used locally for scrofulous and fœtid ulcers, foul discharges, enlarged tonsils, nasal polypi, &c. As a direct astringent it is used in gastric and intestinal catarrh and in atonic diarrhœa, bronchorrhœa, colica-pictonum and dysentery; its remote effects are felt in passive hæmorrhages as in menorrhagia, hæmaturia and colliquative sweats. It gives tone to the relaxed mucous membranes and hence used in bronchitis, whooping cough, asthma; also in diabetes, albuminuria, lead colic and in poisoning by narcotics. In large doses it acts as a purgative and in repeated doses as an emetic. As a mild astringent a powder of alum, camphor and cubebs, each 2 grains, is very useful in gleet. Dried alum is astringent, stimulant and escharotic, more powerful than common alum. It is used in fungous granulations, ulcers, &c. Alum is locally applied in catarrhal ophthalmia, granular

lids and ecchymosis of the eyes. In native practice its plaster is frequently used combined with Amba Halad and white of egg in recent ecchymosis, contusions, &c. In hæmorrhoids, bed sores, and even in ulcers it is very useful when applied with brandy. Locally it is used in relaxed uvula; as a gargle for ulcerated gums and sore mouth; as an injection in gonorrhœa, leucorrhœa, menorrhagia, prolapsus of the uterus, rectum and otorrhœa; as a lotion or drops for the black eye. Dried alum is used as an insufflation in chronic nasal catarrh and ozæna. Alum is one of the ingredients in the preparation of tooth powders.

Aluminii Acetas—Aluminium acetate.—Dissolve alminium sulphate in water, and add acetic acid. To this add precipitated calcium carbonate and water. Evaporate. A gummy mass or granular powder, insoluble in water. Dose—5 to 10 grs.

Preparations.—Liquor aluminii acetici. Solution of aluminium acetate. A colourless liquid containing 7½ to 8 per cent. of subacetate of aluminium. As an antiseptic intestinal astringent, used in diarrhœa and dysentery. Externally as a dressing in a diluted form for foul wounds and as a mouth wash.

Aluminii Aceto Tartras (Alsol). Fine white crystals, soluble in water (1 in 1). Used as antiseptic lotion, gargle or douche. 30 to 60 grs. in a pint of water.

Aluminium Boroformate.—Large, pearly scales of an acid reaction, slowly soluble in water or dilute alcohol. Taste astringent. A mild antiseptic and astringent. Used as a dusting powder in tonsilitis, sore throat, affections of the pharynx and larynx, also foul sores and ulcers.

Aluminii Chloridum.—Aluminium Chloride.—To obtain it, dissolve aluminium hydrate in hydrochloric acid, or heat a mixture of aluminia and finely divided carbon in chlorine gas. Deliquescent white amorphous powder, readily soluble in water. Dose—2 to 4 grs.

Liquor aluminii chloridi.—Obtained by the double decomposition of aluminium sulphate and barium chloride. A pale yellow liquid, of acid reaction, without any odour, of astringent taste; sp. gr. 1·250. 3 to 15 minims to 1 ounce of water—forms a spray, gargle or paint.

Antiseptic and local astringent. Used as a spray, gargle or paint in diphtheria, sore throat and tonsilitis. They are of distinct service in locomotor ataxia.

Chloralum.—It contains aluminium sulphate and calcium chloride and some ferric chloride in solution. Used as an antiseptic.

Lapis Divinus.—Lapis Ophthalmicus—Cuprum aluminatum.—Guz.—*Ratanajota*; Hind.—*Chandragota.* Prepared by fusing together one part each of nitre, alum and sulphate of copper, to which $\frac{1}{80}$th part of camphor is added. Sticks of different colours varying from yellow and white to pink. The stick resembles a leech in shape and size. Used as a collyrium for the eyes in ophthalmia.

Aluminii Hydras.—Aluminium hydrate, hydrated alumina.—Dissolve alum and sodium carbonate equal parts in water, heat, mix and powder the precipitate. A white amorphous powder, insoluble in water or alcohol, soluble in alkaline or acid solutions. Dose—5 to 10 grs. A feeble astringent and antacid, locally a cooling desiccant powder, applied to the skin in superficial burns, in intertrigo and on inflamed skin. Internally given in dyspepsia, diarrhœa, &c.

Aluminii Nitras—Aluminium nitrate.—Act upon aluminium sulphate with nitric acid. Used as solution—4 to 6 grains to 1 ounce of water. As a parasiticide, useful for pruritus vulvæ.

Alumen Oleas—Aluminum Oleate—Oleate of aluminium.—It is prepared by the action of oleate of sodium on alum. It occurs in powder. Contains 50 per cent. of alum. It is a powerful styptic and antiseptic, checks muco-purulent discharges, and is used in intertrigo round the breasts and the inguinal regions as a dressing for foul ulcers, burns, scalds and sinuses and as an application in eczema.

Bandhâro—meaning binding, that which checks (literally to bind) loose or free and watery discharges.

Take of *mayun* (galls), *phataki* (alum), *surokhara* (nitre) and *sangesirâhata* (soapstone) equal parts. Mix and mould. Occurs in the form of round discs of various sizes of a brownish dark colour, hard, somewhat porous and granular. In smell it resembles dried blood. The taste is astringent, metallic and alum-like. Dose—2 to 6 grs.

Actions and uses.—It is a very powerful astringent, and is used internally in leucorrhœa and in diarrhœa in children. It is also useful in gonorrhœa, gleet, &c. Largely used in native practice in menorrhagia and other hæmorrhages.

Alumino Potassium Salicylate—A salt prepared synthetically by mixing together solutions of potassium acetate and aluminium salicylate. Used as an antiseptic.

Aluminii Sulphas—Aluminium Sulphate.—To obtain it, dissolve freshly precipitated alumini hydras in diluted sulphuric acid, filter

and evaporate. White crystalline powder, soluble in water (1 in 1·2), insoluble in alcohol. Aluminii sulphas is an antiseptic, disinfectant and deodorant; used in leucorrhœa, chronic dysentery, cancers, vascular nævi, polypi, fœtid discharges, enlarged tonsils, nasal catarrh and diseases of the os uteri; rarely used internally, externally as solution (1 to 20).

Aluminium Sulphite.—Pass the vapour of carbon bisulphide over alumina at a bright red heat. A glassy melted mass, decomposed by water with the evolution of sulphuretted hydrogen. A white powder, insoluble in water. Dose—10 to 30 grs. Antiseptic, non-irritating, non-poisonous; given internally in fœtid stools. Locally used as a dusting powder.

Aluminium Bisulphite.—A white powder, soluble in water. Antiseptic.

CERIUM.

A rare metal, never found free in nature, but as cerite gadolinite and orthite. The metal is chocolate-brown and burns like magnesium.

Cerii Oxalas, B.P.—Cerium Oxalate.—Precipitate a soluble cerium salt with soluble oxalate of ammonium. It contains some lanthanum oxalate and didymium oxalate. A white granular powder, without any odour or taste. Soluble in diluted sulphuric acid and hydrochloric acid. Insoluble in water, alcohol or ether. Dose—2 to 10 grs.

Cerii Nitrate and Citrate.—Both are soluble salts.

Physiological action.—Gastric sedative and nervine tonic. It has a selective action on the mucous membrane of the stomach and used in vomiting during pregnancy, in pyrosis, phthisical dyspepsia and other painful affections of the stomach as gastric ulcer. It is used as a nervine tonic in epilepsy, chorea, palpitation of the heart, hysteria, asthma and migraine. In laryngeal cough and in chronic coughs and asthma it is very useful. Cerii nitras and cerii citras are more effective than cerii oxalas, and as such better borne in nausea and vomiting of pregnancy. It is also given in dysmenorrhœa, hysteria in atonic dyspepsia, and in violent morning cough of early stage of phthisis; also in chronic bronchitis, whooping cough, &c.

FERRUM, B.P.—IRON.

This element is rarely met with free in nature, though very widely distributed in both the organic and the inorganic kingdoms. Found in nearly all rocks, soils, &c., variously combined with oxygen as hæmatite, magnetic iron ore, &c.; with sulphur as iron pyritis and as carbonate of iron, in spathic iron, in the ashes of plants and even the blood of animals.

Vernacular.—Eng.—*Iron, Iron wire;* Arab.—*Hedeed;* Burm.—*Than;* Beng.—*Loha Loba;* Cing.—*Yekada;* Duk.—*Loha;* Guz.—*Lodhun Levu;* Hind.—*Loha;* Latin.—*Ferrum;* Malay.—*Basi, Besi;* Mar.—*Lokhand;* Pers.—*Ahan;* Sans.—*Ayas, Hyam, Loham;* Tam.—*Irinbu;* Tel.—*Inumu.*

A hard, malleable or ductile metal, without any odour, of a slight styptic taste. Medicinally used in the form of fine bright and non-elastic annealed iron wire, or wrought iron nails. Metallic iron is used in the preparation of VINUM FERRI, B.P. (1 in 20). Dose—½ to 2 drs. VINUM FERRI MALAS.—Malate of iron wine. To obtain it, digest iron wire in cider. Dose—1 oz. FERRI MALAS is given with salicylates for sub-acute rheumatism. Dose—1 to 3 grs. EXTRACTUM POMI FERRATUM.—Ferrated extract of apples. Iron wire digested in the juice of apples. Dose—3 to 10 grs. TINCTURA FERRI POMATA.—(1 in 10 of the ferrated extract of apples.) Dose—15 to 30 ms. Ferratin contains 6 per cent. of iron. Dose—8 to 10 grs. Ferropyrin contains 12 per cent. of iron and 64 per cent. of antipyrin. Dose—3 to 8 grs.

Mistura Ferri Aromatica—Aromatic iron mixture. Contains iron wire 2, red cinchona bark 4, cloves 1, calumba 2, peppermint water 50, tinctura cardamomi co. 12, tincture of orange peel (dried) 2. Dose—1 to 2 ozs.

Ferrum Redactum, B.P.—Reduced Iron.

Vernacular.—Eng.—*Reduced Iron, Iron Rust, Powder of Iron;* Arab.—*Sadid-ul-hadid;* Burm.—*Than Khya;* Guz.—*Loha Bhashma;* Malay.—*Tai Basi;* Mar.—*Karatan Basi;* Tam.—*Iron Butapu;* Tel.—*Tuphu.*

Subject ferric hydroxide contained in gun barrel to a dull red heat and pass a stream of dry hydrogen gas over it. The natives prepare it from metallic iron (*Loha bhashma*) by the usual process of purification and reduction. A fine greysh-black powder, without any odour or taste. Contains 95 per cent. of metallic iron with a variable amount of iron oxide. It is insoluble in water or alcohol, soluble in

hydrochloric acid, exhibiting metallic streaks when rubbed in a mortar.

Preparation.—Trochiscus ferri redacti, B.P., 1 gr. in each ; and *Loha asava* (iron wine). A native iron wine : contains purified iron, loha-bhashm, trikatu, triphala, javakhar, ajmod, vavading, motha chitrak, each 1 part, dhauriphul 5 parts. Make powder. Then add molasses 16 parts, honey 16 parts and water 60 parts. Set aside the whole till alcoholic fermentation takes place. A fine snuff-coloured liquid, of a styptic taste and ferruginous smell. Dose—1 to 2 drs.

Physiological action.—Metallic iron is an active oxidizing agent. Red corpuscles of the blood contain iron (1 in 230). It is also found in the bile, chyle, gastric juice, lymph, milk, pigment of the eye and in the urine. In small doses it acts as a stomachic, as a blood or general tonic, and assists digestion. In large doses, or if long continued in small doses, it acts as a gastric irritant, impairs digestion, gives rise to nausea, and vomiting. As a hæmostatic it locally constringes the tissues and acts as an astringent.

It increases the hæmoglobin in the red corpuscles of the blood. This may be due to its direct conversion into an ingredient of hæmoglobin or to its stimulant action on the hæmapoietic organs.

When taken into the stomach, iron is changed into ferrum chloride by the action of the hydrochloric acid of the gastric juice. In the duodenum it is changed into an alkaline ferrum albuminate and in the intestines into ferrous sulphide. Through the lymphatics iron is absorbed into the blood and deposited in the liver, spleen and bone marrow as hæmoglobin. Iron is contra-indicated in fever, plethora and internal hæmorrhages. It should always be given after meals and after the bowels are relieved. Iron preparations are hæmatinic, slightly astringent and stimulant. As a hæmatinic they are given in general debility, to restore the quality of the blood in anæmia, chlorosis, amenorrhœa and constipation. As a tonic they are used in chorea, hysteria, neuralgia, seminal weakness, &c. As an alterative in scrofula, enlargement of the spleen and of other secreting glands. In albuminuria, in chronic Bright's disease, in certain low states of the system which accompany acute diseases, as erysipelas, diphtheria, scarlatina, &c., they are largely used. A portion of the iron taken internally is acted upon by sulphuretted hydrogen in the intestines and thus gives a black colour to the stools. Taken for a long time, it also blackens the tongue and teeth. Being an astringent, it is generally prescribed in conjunction with a laxative. The oxides and the carbonates are largely used. They are hæmatinics and slightly astringent. Those containing organic

or vegetable acids are less irritating to the stomach and also less astringent than those containing mineral acids. The vegetable acid salts are generally the proto or ferrous salts. The mineral acid salts are more powerful astringents and have a constricting action on the tissues. As hæmostatic, mineral acid salts are used in passive hæmorrhages, as in hæmorrhages from the bowels, uterus, kidney and bladder; in hæmorrhage caused by curetting for the removal of retained placenta, in that due to uterine polypus, in menorrhagia, &c., also from any wound, more especially of a capillary origin as in extracting a tooth and also in passive discharges as in leucorrhœa and gleet. As local astringents they are applied to the skin as in erysipelas, elephantiasis, &c. As local stimulant they are applied to the mucous membranes of the mouth, in spongy gums, relaxed uvula, &c., and to diphtheritic membranes.

Ferri Acetas—Iron Acetate.—Add excess of ammonia to the solution of ferric sulphate. The ferric hydrate is precipitated. Dissolve the precipitate in glacial acetic acid. Evaporate. Liquor Ferri Acetatis, B.P.—Solution of ferric acetate.—A liquid of a deep red colour and of an acetous odour. Sp. gr. 1.031. Dose—5 to 15 ms. *Preparation.*—Tinctura Ferri Acetatis, B.P. (1 in 4). Dose—5 to 30 ms.

Tinctura Ferri Acetici Ærtheria.—Contains acetic ether. Dose —5 to 20 ms. *Actions and uses.*—The tincture is astringent and stimulant. Given with aloes or cascara sagrada in anæmia, chlorosis, &c.

Ferri Albuminas.—Iron albuminate.—In a solution of chloroxide of iron, dissolve egg albumen. Neutralize with solution of soda: collect the precipitate. In brown scales or powder, soluble in water acidulated with hydrochloric acid. Dose—3 to 10 grs. in solution or pill. *Preparation.*—Liquor Ferri Albuminati. Solution of albuminated iron. It contains 4 of iron per 1,000. Dose—1 to 4 drs. Liquor Ferro Peptonate. Prepared like Liquor Ferri Albuminati, the albumen being previously digested with pepsin. Dose—1 to 4 drs. Liquor Ferri Peptonaticum Quinina. Contains quinine hydrochloride ½ per cent. Dose—1 to 4 drs.

Actions and uses.—Tonic used in anæmia and gastric ulcers: more readily absorbed into the system than other salts of iron.

Ferri et Ammonii Citras, B.P.—Iron and ammonium citrate.—Add ferric sulphate to a solution of ammonia. Heat and dissolve the precipitate in citric acid and then add ammonia water. Another

method.—Add to solution of ferric citrate 10, ammonia water 4, and evaporate. Deliquescent, dark red or brown, thin transparent scales, without any odour, of a slightly sweetish and astringent taste, soluble in water (2 in 1), almost insoluble in alcohol. Dose—5 to 10 grs. Vinum Ferri Citratis, B.P.—Wine of iron citrate. Contains ferri et ammonii citras 160, orange wine to make one pint. Dose—1½ to 4 drs. Mistura Ferri Arsenicalis.—Citrate of iron and ammonium 7½ grs., arsenical solution 5 ms., tincture of calumba 24 ms., water 1 ounce. Dose—4 to 8 drs.

Actions and uses.—A mild hæmatinic and feeble astringent. Readily borne by the stomach and very useful for children in tabes mesenterica, tubercular affections, in anæmia, and enlarged spleen; and in adults, in chlorosis and debility after exhausting diseases.

Ferri et Ammonii Sulphas—Ferric ammonium sulphate. Ammonio ferric alum. Iron alum. Ferro alumen.—Heat together solutions of ferric sulphate 10 and ammonium sulphate 1, dissolve and crystallize. Efflorescent, pale violet, octohedral crystals, without any odour, of styptic taste and acid reaction; soluble in water (1 in 3), insoluble in alcohol. Dose—3 to 10 grs. Used as a gargle, 8 grs. to 1 ounce.

Actions and uses.—Styptic, given in hæmaturia. As an astringent styptic gargle in bleeding from the gums, as an injection in leucorrhœa and chronic fluxes or diarrhœa. Chiefly used to arrest hæmorrhages from the kidneys; as a spray in congested throat.

Ferri et Ammonii Tartras—Ammonio Ferric Tartrate—Iron and Ammonium Tartrate. Add solution of ferric sulphate to ammonia water; to the precipitate add solution of tartaric acid and evaporate. Highly deliquescent, thin transparent reddish-brown scales, without any odour, but of a sweetish ferruginous taste. Soluble in water, insoluble in alcohol. Contains about 25 per cent. of ferric oxide or 17 per cent. of iron. Dose—5 to 20 grs.

Actions and uses.—Mild hæmatinic. Slightly irritant. Used in anæmia and chlorosis.

Ferri Arsenas, B.P.—Iron Arsenate. Arseniate of Iron.—It contains ferrous arsenate with ferric arsenate and some iron oxide. Boil together a mixed solution of ferrous sulphate, sodium arsenate and sodium bicarbonate, and wash the precipitate. An amorphous powder, greenish in colour and without any taste; insoluble in water, soluble in hydrochloric acid. Dose—$\frac{1}{16}$ to ¼ of a grain. *Preparation.*—Pilula ferri arsenicalis. Arsenious anhydride $\frac{1}{60}$ of a grain and

exsiccated sulphate of iron 3 grains. Make pill. Dose—One pill. Unguentum ferri arsenicalis (1 in 25).

Actions and uses.—Alterative and nervine tonic: given in chronic skin diseases, herpetic and squamous eruptions, also in elephantiasis, leprosy, and lupus; chiefly given in night sweats.

Ferri Benzoas.—Add benzoic acid to a solution of ferrous carbonate. Evaporate. Dose—10 to 15 grs.

Actions and uses.—Tonic and alterative. Given in scrofula, generally with cod-liver oil.

Ferri Bromidum.—Ferrous bromide.—Prepared by a direct combination of bromine with metallic iron in the presence of water and evaporation of the solution till it solidifies. Greyish-white, deliquescent masses; on exposure to air becoming oxidized and brown or yellow owing to its conversion into oxybromide. Dose—3 to 10 grs.

Preparation.—Syrupus Ferri Bromidi. Each drachm contains 4½ grs. of ferrous bromide. Dose—½ to 1 dr. Syrupus Ferri et Strychninæ Hydrobromatum—Syrup Ferri Bromidi cum Strychnina. Contains 4½ grs. of ferrous bromide, and strychnine $\frac{1}{64}$ gr. in each drachm. Dose—½ to 1 dr. Syrup Ferri Quininæ et Strychninæ Hydrobromatum—Syrupus Ferri Bromidi cum Quinina et Strychnina. Contains same quantity as above with 1 gr. of quinine hydrobromate in each drachm of the syrup. Dose—½ to 1 dr. Syrupus Ferri et Quininæ Hydrobromatum—Syrupus Ferri Bromidi cum Quinina. Dose—½ to 1 dr. Glyceritum Ferri Bromidi.—Contains 5 grs. of ferri bromidum in each drachm. The glycerine preserves the ferrous salts from oxidation. It does not derange the stomach and hence useful for children. Dose—½ to 1 dr.

Actions and uses.—Tonic and sedative combined, also alterative and resolvent. Given in scrofula, anæmia, chlorosis with wakefulness; also in enlargements of the uterus or ovaries, and in bronchocele, chorea, hysteria and epilepsy.

Ferri Subcarbonas.—Subcarbonate of Iron. Guz.—*Pâkhana bhed, Dagadi*; Mah.—*Pakhana bhed*; Sans.—*Pashana bhed.*

Spathose iron ore or iron spar contains subcarbonate of iron with magnesium and lime. Mix iron sulphate with sodium carbonate, wash and dry. Efflorescent, small, amorphous, heavy, irregular masses of a light or greyish-brown colour sprinkled with white, very brittle: soluble in dilute hydrochloric acid. The smell is like that of clay and taste chalybeate.

Preparation.—Pakhan bheda-churana—compound powder. Contains iron spar—Pâkhana bheda, silâjita (liquid amber orientalis), pipali and patola, equal parts. Mix and make a powder. Dose—5 to 10 grs. Pâkhana bheda kuvâtha (compound decoction). It contains iron spar—pakhana bheda, nishota, harade, dhamaso, pokara mula, gokharu, palasa papado, singoran, kâkadi bija, each one part. Add water and boil to make 40 parts. Dose—2 to 6 drs.

Actions and uses.—Hæmatinic, and feebly astringent; given in anæmia, chlorosis, neuralgia and chorea. It has a specific diuretic action in urinary diseases, in scalding and scanty urine. It is also recommended in gonorrhœa.

Ferri Carbonas Saccharata, B.P.—Saccharated Iron Carbonate, Saccharated Ferrous Carbonate.—Add to a hot solution of ferrous sulphate, carbonate of ammonium. Remove the filtrate, and rub the precipitate with sugar. It is a mixture of ferrous oxy carbonate, more or less oxidised, the carbonate being about one-third of the mixture. Greyish-brown powder or small lumps; of a sweet chalybeate taste and without any odour. Partially soluble in water entirely so in warm hydrochloric acid and water, with the evolution of carbonic acid. Dose—10 to 30 grs.

Preparation.—Mistura ferri composita, B. P. (Griffith's mixture.) Compound iron mixture.—Contains ferrous carbonate with sugar, myrrha, spirit of nutmeg and rose water. Dose—½ to 1 oz. Pilula Ferri, Blaud's pills, B.P. (1 in 5). Massa ferri carbonatis—mass of ferrous carbonate. Ferrous sulphate 100, sodium carbonate 100, honey 38 and sugar 25. Contains 42 per cent. of ferrous carbonate. Dose—3 to 5 grs. Trochisci Ferri Carbonatis Saccharatæ. 3 grs. each.

Actions and uses.—Stimulant to the digestive tract, feebly astringent, and hæmatinic. Griffith's mixture is largely used in amenorrhœa, hysteria, anæmia, chlorosis, and as a tonic in chronic catarrh for delicate children and females; also in debility of digestive organs, phthisis, &c.

Ferri Caseinatum.—A pale yellow powder without any odour or taste. Insoluble in water. Soluble in dilute ammonia water. Contains about 5 per cent. of iron.

Ferri Perchloridum—Ferric Chloride. Perchloride of Iron.—Dissolve iron wire in hydrochloric acid and then add nitric acid to peroxidize it from ferrous to ferric salt, evaporate and crystallise.

Orange yellow crystalline masses. Freely soluble in water, alcohol and ether. Dose—1 to 4 grs.

Preparations.—Liquor Ferri Perchloridi Fortis, B.P.—Strong solution of perchloride of iron. Aqueous solution of ferric chloride. An orange-brown solution of a faint hydrochloric acid odour, acid reaction and freely soluble in water, alcohol and ether. It contains 22½ grs. of iron in 110 ms. Sp. gr. 1·42. Dose—1 to 4 ms. Liquor Ferri Perchloridi, B.P.—(1 of the strong solution of ferric chloride in 4). A reddish-brown aqueous solution of a faint hydrochloric acid odour and acid styptic taste. Dose—5 to 15 ms. well diluted. Mistura Ferri Perchloridi.—Solution of perchloride of iron 15 ms., spirit of chloroform 9 ms., glycerine 9 ms. and water 1 ounce. Mistura ferri salina contains citrate of potassium 22 grs., solution of perchloride of iron 24 ms., spirit of chloroform 9 ms. and water 1 ounce. Tinctura Ferri Perchloridi, B.P.—Steel drops—Tincture of steel—Tincture of ferric chloride. To obtain it, add alcohol (3) to strong solution of ferric chloride (1). Bright brown liquid. Odour slight, taste astringent, styptic ; acid reaction. Dose —5 to 15 ms. Mistura Ferri Amara.—Solution of perchloride of iron 30 ms., spirit of chloroform 5 ms. and infusion of quassia 1 ounce.

Mistura or Liquor Ferri et Ammonii Acetatis.—Basham's mixture.—Tincture of steel 2, diluted acetic acid 3, liquor ammonii acetatis 20, aromatic elixir 10, glycerine 12, water 100. Dose—1 to 4 drs. Liquor Ferri Chloroxidi.—Strong solution of ferric chloride 4, water 40 : add solution of ammonia 28. Wash the precipitate, dissolve with gentle heat in strong solution of ferric chloride 1, and water 20. Dose—10 to 30 ms.

Ferri et Quininæ Chloridum.—Iron and Quinine Chloride.—Dissolve ferric chloride and quinine in water in molecular proportions. Reddish-brown scales. Taste bitter. The solution is hæmostatic, non-caustic ; used in epistaxis. Internally given in 1 gr. doses in uterine and pulmonary hæmorrhages.

All these preparations are incompatible with infusions containing tannin, alkalies, alkaline carbonates and mucilage.

Other preparations are:—Injectio ferri perchloridi—60 grains of ferric chloride in 1 ounce, Spray—nebula ferri perchloridi—3 grains in 1 ounce, Pigmentum ferri perchloridi forte—120 grains in 1 ounce, Pigmentum ferri perchloridi dilutum—60 grains in 1 ounce, Glyceritum ferri perchloridi (1 in 4)—used as a paint. Pigment for diphtheria ; ferric chloridi solution 4, menthol 10, toluol 36, alcohol 100. Gossypium et Linteum Ferri Perchloridi or styptic wool and lint, each containing 15 per cent. of the perchloride.

Physiological action.—Strong solution of ferric chloride.—As a styptic it arrests hæmorrhages depending upon the rupture of small arterioles and capillaries. It contracts the part to which it is applied. It coagulates the blood and hence the solution can be used as intravenous injection. *Therapeutics.*—As a hæmostatic, astringent, and styptic it is used in surgery, dentistry and midwifery. In hæmoptysis and epistaxis it is used as inhalation from an atomizer. The solution is used as an injection into the vessels as in varicocele and other vascular tumours as hæmorrhoids; or applied to the cavity of the uterus in *post-partem* hæmorrhage; externally as a lotion with glycerine; it is also used as an injection (1 in 100) in leucorrhœa and into the rectum in cases of thread worms. Also applied to swollen parts in erysipelas, elephantiasis, and in chronic skin diseases as eczema, psoriasis and lichen. Tinctura ferri perchloridi is an astringent, tonic, diuretic and hæmatinic. In catarrhal and inflammatory conditions of the stomach and intestines its use should be interdicted. It is given internally with benefit in atonic diseases as scrofula, chlorosis, diabetes, chronic bronchitis and colliquative sweats; in low states of the system, septic affections, as erysipelas and elephantiasis; also pyemia, albuminuria, chronic Bright's disease and rheumatism; in chronic nervous troubles as in chorea, epilepsy, insanity, hysteria and neuralgia; also in enlarged spleen, in fatty heart with palpitation, and in chronic stomatitis. Liquor Ferri et Ammonii Acetatis is tonic and astringent and given in scrofulous and anæmic condition chlorosis and amenorrhœa and in affections of the urinary organs as spermatorrhœa, gleet, &c. Ferri et Quiniæ Chloridum is hæmostatic and non-caustic, used in epistaxis and in uterine and pulmonary hæmorrhages.

Ferri Citras—Ferric citrate, citrate of iron.—Mix together solution of ferric sulphate 10, ammonia water 8 and citric acid 3, and evaporate. Thin red scales, without any odour and slight ferruginous taste, soluble in water, insoluble in alcohol. When heated, it changes into ferric oxide. Dose—5 to 15 grs. Used in the preparation of liquor ferri citratis. A dark-brown aqueous solution, without any odour, ferruginous taste, acid reaction, contains 7·5 of iron. Dose—5 to 15 ms. A mild tonic, given in anæmia, chlorosis, &c.

Ferrum Dialysatum—Dialysed iron.—To the solution of ferric oxychloride add ammonia water. Dissolve the precipitate of ferric hydrate in strong solution of ferric chloride, agitate with water and evaporate. Contains ferric oxychloride (1 in 10).

Liquor Ferri Dialysatus—Solution of dialised iron.—It is a solution of basic ferric oxychloride from which most of the acidulous

matter is removed by dialysis. A dark reddish-brown liquid, of a mild ferruginous, non-astringent taste. Dose—10 to 30 ms. Glycerinum ferri dialysati 1 of the solution in 3. Dose—30 to 90 grs.

Actions and uses.—It can be borne by the weakest patient and the most irritable stomach. An extremely valuable hæmatinic without astringency, useful in ulceration of the mucous membranes of the alimentary canal and of the mouth. It should be used undiluted, or the drops mixed with glycerine. As an antidote to arsenic it should be given in 1 ounce doses.

Ferri Fluoridum—Ferrous Fluoride.—A purplish powder. Insoluble in water and other solvents; used as solution (1 in 120) Dose—$\frac{1}{24}$ to $\frac{1}{4}$ gr. Solution 5 to 20 ms. Used as an hæmatinic and to diminish enlarged spleen.

Ferri Glycero Phosphas—Ferri Glycero phosphate.—Yellowish scales. Soluble in water and in diluted alcohol. Dose—1 to 5 grs. *Preparation.*—Vinum ferri glycero phosphatis (1 in 100). As a nervine tonic, given in neurasthenia and convalescence from influenza.

Ferri Hypophosphis—Ferrous hypophosphite. Hypophosphite of iron.—Add solution of ferric chloride to the solution of sodium hypophosphite. Dry the resulting precipitate. When pure, in green crystals. It rapidly oxidises and becomes an amorphous whitish powder without odour and without any taste. Soluble in water (1 in 8), freely so in hydrochloric acid and in solution of sodium citrate. Dose—2 to 5 grs.

Preparation.—Liquor ferri hypophosphitis fortis (5 grs. in each drachm). Dose—10 to 30 ms. Made with ferrous sulphate 76 grs., barium hypophosphite 83 grs., diluted sulphuric acid 10 ms., water 2 ozs. Liquor Ferri Hypophosphitis Compositus—Liquor Hypophosphitum Compositus (as good as chemical food).—Calcium hypophosphite 320 grs., sodium hypophosphite 320 grs., magnesium hypophosphite 160 grs., strong solution of iron hypophosphite 6 fld. ozs., hypophosphorus acid (30 per cent.) $\frac{1}{2}$ ounce, distilled water to 20 ozs. Dose—$\frac{1}{2}$ to 2 drs. Each drachm contains 2 grs. of sodium and calcium hypophosphites, 1 gr. magnesium hypophosphite and $1\frac{1}{2}$ gr. ferrous hypophosphite. Syrupus Ferri Hypophosphitis (1 of the strong solution in 5). Dose—$\frac{1}{2}$ to 1 dr. Pilula Ferri Hypophosphitis cum Strychnina.—Strychnine $\frac{1}{30}$ gr., ferrous hypophosphite 2 grs. One pill. Dose—2 grs.

Actions and uses.—Hæmatinic. Used for the combined effects of iron and phosphorus in anæmia, chlorosis, scrofula, general and seminal weakness, rickets, &c.

Ferri Iodidum Saccharatum—Saccharated Ferrous Iodide. Mix iron wire 6, iodine 17, water 40. To the filtrate add sugar of milk 40, evaporate, then add reduced iron 1. Another method.—Evaporate syrupus ferri iodidi. A yellowish-white hygroscopic powder, without any odour, and of a sweet ferruginous taste, slightly acid in reaction; soluble in water 1 in 7, sparingly soluble in alcohol. Contains 20 per cent. of ferrous iodide. Dose—2 to 5 grs.

Ferri Iodidum—Ferrous Iodide, Iodide of iron. Heat together iron wire, iodine and water. It contains 18 per cent. of water of crystallization and a little of oxide of iron. Deliquescent crystals, of a green or brown colour, without any odour, soluble in water. Dose—1 to 5 grs.

Preparation.—Pilula Ferri Iodidi—Pill of ferrous iodide (1 of iodide of iron in 3½ grs.)—Blanchard's pill.—Fine iron wire 40 grs., iodine 80 grs., sugar powdered 70 grs., liquorice powder 140 grs., distilled water 50 ms. Mix and cover with a coating of balsam of tolu in ether. Dose—3 to 8 grs. Glyceritum Ferri Iodidi—Contains ferrous iodide 1 in 10, in glycerine as a basis. Dose—½ to 1 dr. Syrupus Ferri Iodidi, B.P.—Syrup of ferrous iodide. Heat together fine iron wire and iodine in distilled water and add syrup to the hot liquid. A colourless syrupy liquid of a ferruginous taste and without any odour. Sp. gr. 1·387. 11 minims contain 1 gr. of ferrous iodide. Dose—½ to 1 fld. dr.

Actions and uses.—Alterative, tonic, diuretic and emmenagogue. Given in scrofulous and tubercular affections, as phthisis, tuberculosis, leucorrhœa and chronic rheumatism; also in amenorrhœa, dysmenorrhœa, chlorosis and diabetes.

Ferri Lactas.—Ferrous Lactate.—Obtained by the action of lactic acid on iron filings in water or by the double decomposition of ferrous sulphate and calcium lactate. Pale, greenish-white, needle-shaped crystals of a peculiar odour and mild sweetish taste. Slightly soluble in water (in 40); insoluble in alcohol; freely soluble in a solution of citrate of sodium forming a green solution. Dose—2 to 10 grs. in pills. Syrupus ferri lactatis (1 in 12). Dose—½ to 1 dr. as a general tonic easily assimilated; given in anæmia, chlorosis, &c.

Ferri et Manganesii Citras.—Reddish-brown scales, soluble in water. Dose 3 to 15 grs.; used as hypodermic injection. Given in chlorosis.

Ferri et Magnesii Sulphas.—Double salt containing sulphate of iron and sulphate of magnesium. Small granular crystals, colour pale-green, taste chalybeate; soluble in water (3 in 4). Dose—2 to 10 grs. Used in the preparation of effervescent ferro magnesian sulphate (5 grs. in 1 dr.). It is neither astringent nor aperient; given in chlorosis and anæmia.

Ferri Oleas—Ferrous Oleate—Oleatum Ferri.—A waxy solid. Colour pale-green. On exposure to air, it oxidises, and a dark-red film forms on the surface. As an astringent and tonic, given with cod-liver oil in tubercular diseases, scrofula, &c. Externally it is applied as a local astringent.

Ferri Oxalas—Ferrous Oxalate.—Add to a solution of ferrous sulphate, solution of oxalic acid, and dry the precipitate. A pale-yellow crystalline powder, sparingly soluble in water, without any odour, soluble in hydrochloric acid or hot diluted sulphuric acid. Dose—2 to 3 grs. Used as an hæmatinic.

Ferri Peroxidum Hydratum—Ferri Sesquioxidum—Ferri Oxidum Rubrum—Hydrous Peroxide of Iron—Ferric Oxyhydrate. Also called Rouge, Crocus of Mars. Rouge is used by jewellers for brightening gold. Mix together solution of ferric sulphate, ammonia water, and water, and dry the moist peroxide. A reddish-brown powder without any taste. It is not magnetic. Dissolves completely with the aid of heat in diluted hydrochloric acid. Used as Emplastrum Ferri, chalybeate or strengthening plaster contains ferric hydrate dried 1, Burgundy pitch 2, and lead plaster 8 (1 in 11). It is also called Emplastrum Thuris or Emplastrum Roborans. Trochisci Ferri—Troches of iron. Ferric hydrate 30, vanilla 1, sugar 100, tragacanth q.s. Make 100 troches. Each contains 4½ grs. of ferric hydrate.

Actions and uses.—Tonic, emmenagogue, and anthelmintic. Given in anæmia, chlorosis, general debility, amenorrhœa, neuralgia, spasmodic diseases as asthma, laryngismus stridulus, &c. The plaster is used as local stimulant in rheumatism, enlarged glands, &c.

Ferri Oxidum Magneticum—Ferri Oxidum Nigrum—Magnetic oxide of iron.

Vernacular—Arab.—*Miknatis, Mignatis, Hasr-ul Mignatis;* Duk.—*Chamak-pathar;* Hind.—*Chamak-ka-pathar, Chakamak;* Pers.—*Sang-e-rhun Ruba, Sang-e-chamak.*

Precipitate a solution of sulphate and persulphate of iron with solution of soda and boil. A dark grayish-black or brown powder, strongly magnetic, without odour and taste, soluble in dilute hydrochloric acid. Dose—5 to 10 grs.

Used in the preparation of ferrum oxidum saccharatum. Iron saccharated (red or brown powder). It is soluble in water. Dose—6 to 20 grs. Contains 2·8 per cent. of iron.

Actions and uses.—Non-astringent, hæmatinic; useful in neuralgia, chlorosis and anæmia.

Ferri Oxypersulphas—Ferri Subsulphas—Basic ferric sulphate. Syn.—Monsel's salt.—Boil sulphate of iron with sulphuric acid and nitric acid. Evaporate. Dark-brown scales; nearly odourless and of an acid styptic taste and acid reaction; soluble in water and alcohol. Liquor Ferri Subsulphatis.—A syrupy fluid. Contains 43.7 of the salt. Dose—3 to 6 ms.

Actions and uses.—Locally hæmostatic, slightly irritating, more astringent than liquor ferri persulphatis. It coagulates the blood and hence used in all active bleeding from cuts and wounds and in chancres. Internally in a diluted form it is sued in hæmorrhages from the stomach, bowels and lungs; also in diarrhœa. In obstinate epistaxis its solution (1 in 60) is useful in the form of a spray.

Mandur.—Mostly composed of Ferri Peroxidum Rubrum.

Vernacular.—Arab.—*Khabsul Hadid, Jafferaunt Hadid, Langarul Hadid*; Beng.—*Lohar gu, Lohan Zanghar*; Burm.—*Sanpia, Tambia, Sankhi, Tankhi*; Can.—*Khabbarnadda Kitta*; Cing. *Yakada Kittam Mallakada*; Duk.—*Lohaka Zang Lohaka gu, Mundur*; Eng.—*Iron rust, Impure peroxide of iron;* Guz.—*Lokhandun Zang*; Hind.—*Lohaka Zang, Lohaka gu Mundur*; Mah.—*Lokhandacha Kotai*; Malyal.—*Irambak Kitane*; Pers.—*Zang-e-ahun Chirk-e-ahun, Rime-ahun Zangar-e-ahun*; Sans—*Munduram*; Tam.—*Ayach, Chanduram, Irumboo Chittum*; Tel.—*Innapa Chittunu Ayia Shinduramn.*

Rustlike red powder, insoluble in water, without any odour and of a ferruginous taste.

Preparation.—Mandur Bhasmâ is prepared from iron rust in the same way as *Loha Bhashm*, substituting iron rust for steel dust. It is composed mostly of red oxide of iron. Dose—2 to 6 grs. *Mandur Asva.*—Same as Loha Asva, substituting iron rust for steel dust.

Madur Vataka (Iron rust pills).—Add iron rust 12 to a mixture of haradân 1, behedân 1, âmlâ chatura shana 1, piplimula 1, chitro 1, devadaru 1, suvarna makshik bhasm 1, taj 1, dâru halad 1, nagar moth 1, vava dinga 1. Add honey to make a mass. Dose—3 to 6 grs.

Actions and uses.—Hæmatinic ; largely used in jaundice, gleet, dyspepsia and in anæmic state of the system.

Ferri Peroxidum Humidum.—Moist Peroxide of Iron, containing 86 per cent. of uncombined water in hydrated peroxide of iron. A soft pasty mass of a reddish-brown colour, soluble in dilute hydrochloric acid. Dose—A table spoonful. Employed as an antidote in cases of arsenical poisoning. Should be prepared fresh before use.

Ferri Oxidum Hydratum cum Magnesia.—Prepared by the interaction of solution of ferric sulphate 50 and magnesia 10 in water. Dose—1 oz. Used as an antidote in arsenical poisoning.

Ferri Peptonas.—Peptonated iron.—Dissolve egg albumen with pepsin and hydrochloric acid, neutralize with solution of soda, then add solution of chloroxide of iron and again neutralize with soda solution. Let the precipitate subside. Dissolve the precipitate with hydrochloric acid. To the solution add compound tincture of cinnamon, evaporate and dry. In fine scales, soluble in water. Dose—2 to 6 grs.

Preparations.—Liquor Ferri Peptonati. Dose—1 to 4 drs. Liquor Ferri Peptonati cum Quinina contains ½ per cent. of quinine hydrochloride. Dose—1 to 4 drs. Liquor Ferro Manganesii Peptonati.—Solution of peptonated iron and manganese. It contains 1 per 1,000 of manganese. Dose—1 to 4 drs.

Liquor Ferri Pernitratis, B.P.—Solution of Pernitrate of Iron, Solution of Ferric Nitrate. Liquor Ferri Nitratis. Dissolve iron wire in nitric acid and add water to give the solution the sp. gr. of 1·107. Another method.—Mix solution of ferric sulphate with ammonia water, wash the precipitate and dissolve it in nitric acid. A clear solution of a reddish-brown or amber colour, of an astringent taste and without odour ; contains 3·3 per cent. of iron. Dose—5 to 15 minims. Injection—10 to 20 minims in an ounce of water. Used as solution or injection. As a powerful astringent, hæmatinic, highly recommended in menorrhagia, diarrhœa and other passive discharges.

Ferri Phosphas, B.P.—Iron Phosphate.—Add solution of ferrous sulphate, sodium phosphate and sodium bicarbonate together and evaporate. It contains 47 per cent. of hydrous ferrous phosphate, with ferric phosphate and some oxide. A slaty blue-coloured amorphous powder, insoluble in water, soluble in hydrochloric acid. Dose—5 to 10 grs.

Preparation.—Syrupus Ferri Phosphatis, B.P.—Granulated sulphate of iron 224 grs., phosphate of soda 200 grs., bicarbonate of soda 56 grs., concentrated phosphoric acid 1¼ fld. ozs., sugar 8 ozs., distilled water 8 fld. ozs. The whole to measure 12 ozs. One drachm contains 1 gr. of anhydrous ferrous phosphate. Dose—½ to 1 fld. dr. Syrupus Ferri et Manganesii Phosphatum. Syrupus Ferri Phosphatis cum Manganesio. Contains ¼ grain of phosphate of iron and manganese in each fluid drachm. Dose—1 dr. Syrupus Ferri Phosphatis Compositus—Similar to Parrish's Syrup or chemical food. (1 fld. dr. contains ½ grain of phosphate of iron, ⅘ grain of phosphate of calcium with some phosphates of potassium and sodium.) Dose—½ to 2 drs. Syrupus Ferri Phosphatis cum quinina et strychnina, B.P.—Similar to Easton's Syrup. One drachm contains 1 gr. anhydrous ferrous phosphate, ⅘ gr. of quinine sulph., $\frac{1}{32}$ grain strychnine. Dose ½ to 1 dr. Pilula Ferri Quininæ et Strychnina Phosphatum—Easton's Syrup pill.—Each equal to 1 dr. of Easton's Syrup. Contains ferrous phosphate 16 grs., quinine 12 grs., strychnine ½ gr., sugar 8 grs., concentrated phosphoric acid 20 ms. for 16 pills. Pilula Trium Phosphatum, of the composition of Easton's Syrup pills with liquorice powder instead of sugar. Elixir Ferri Phosphatis cum Quinina et Strychnina.—The same as the syrupus ferri phosphatis cum quinina et strychnina, using simple elixir in place of syrup as a vehicle.

Actions and uses.—Hæmatinic with very little astringency. Used for the combined effects of phosphorus and iron in rickets, scrofula, nervous debility, dyspepsia, and with advantage in cases of amenorrhœa; also useful in diabetes, as it diminishes voracious appetite and invigorates and increases the power of digestion. Easton's Syrup is a non-constipating, nervine and chalybeate tonic, given in scrofula, amenorrhœa, chlorosis, and nervous rheumatism.

Ferri Picras.—Used in the form of pills. Dose—1 gr. Used as a hepatic stimulant and cholagogue.

Ferri Pyrophosphas Solubilis—Ferric Pyrophosphate—Ferri Pyrophosphas; soluble ferric pyrophosphate. Pyrophosphate of iron with sodium citrate.—Obtained by the interaction of ferric citrate

50 and sodium pyrophosphate 50, dissolve and evaporate. Green, transparent, thin scales. On exposure to air, they turn black, without any odour and of acid saline taste. Freely soluble in water. Insoluble in spirits. Dose—2 to 8 grs. Used as a good chalybeate.

Ferri et Quininæ Chloridum—Iron and quinine chloride.—To prepare it, dissolve one molecule of quinine in one of ferric chloride in water.—Reddish-brown scales, hygroscopic and of a bitter styptic taste. Dose—1 to 2 grs. The solution is used as a hæmostatic, locally in epistaxis, and internally in uterine and pulmonary hæmorrhages.

Ferri et Quininæ Citras, B.P.—Syn.—Iron and quinine citrate. —Mix together solution of ferric sulphate with solution of ammonia, then add quinine sulphate, dilute sulphuric acid, and citric acid. Greenish or golden yellow thin scales, without odour and of a bitter ferruginous taste, soluble in cold water (2 in 1), sparingly so in alcohol. Dose—5 to 10 grs. Used as syrupus ferri et quininæ citratis. Contains 5 grs. to 1 dr. Ferri et Quininæ Citras Effervescens.—Granular effervescent citrate of iron and quinine, 3 grs. of salt in one drachm. Dose—60 grs. Ferri Quininæ et Strychninæ Citras.—Contains 1 per cent. of strychnine. Dose—3 to 10. grs.

Ferri et Quininæ Citras Solubilis—Soluble iron and quinine citrate. —Dissolve ferric citrate 30 in boiling water, add quinine 4, citric acid 1, stir until dissolved, evaporate and dry. Highly deliquescent, thin, transparent greenish scales, without any odour and of bitter ferruginous taste. Soluble in water, sparingly so in alcohol. Dose—3 to 5 grs. Vinum Ferri Amarum. Bitter wine of iron. It contains soluble iron and quinine citrate 5, tincture of orange peel 15, syrup 30, wine 100. Dose—1 to 2 drs.

Actions and uses.—General tonic, antiperiodic and hæmatinic, combines the property of iron and quinine ; only slightly astringent. Given in enlargement of spleen and malaria in anæmic subjects.

Ferri Salicylas.—A purplish-brown powder, slightly soluble in water. Dose—3 to 10 grs. Used as astringent, tonic, antiseptic and antiarthritic ; given in chronic intestinal catarrh, also in weak joints, and for tonsillitis. Locally, as an antiseptic application to foul and bleeding wounds.

Ferri et Strychninæ Citras—Iron and strychnine citrate.—Dissolve ferri ammonii citrate 100 in water, add strychnine 1, citric acid 1. Mix, evaporate. Deliquescent, thin transparent garnetlike scales,

without any odour, of a bitter ferruginous taste; soluble in water, sparingly so in alcohol. Contains strychnine 1 per cent. Dose—3 to 6 grs.

Ferrii Succinas—Succinate of iron.—An amorphous red-brown powder, slightly soluble in cold water, insoluble in alcohol, easily soluble in acids. Dose—1 to 5 grs. Used as tonic, alterative. As a solvent, with chloroform, it is given in the treatment of gallstones and in jaundice.

Ferri Sulphas, B.P.—Ferrous Sulphate—Ferrum Vitriolatum—Sal Martis (Lat.)—Sulphate of Iron—Sulphate of the Protoxide of Iron. Green vitriol—Copperas.

Vernacular:—Arab.—*Lâje-Asfar;* Beng.—*Hirâkosis, Bala Dokta;* Duk.—*Hira Kashish;* Guz.—*Hira Kasis;* Hind.—*Hara Tutia;* Eng.—*Green Vitriol or Green Copperas;* Malay.—*Tarusi;* Pers—*Zunkur-madni, Tutiya-sabs;* Sans.—*Kashisha;* Tam.—*Auna bêdi;* Tel.—*Auna Chedi.*

Iron wires dissolved in dilute sulphuric acid by the aid of heat. Another method.—Decompose iron pyritis by the action of atmospheric air. Large, pale bluish-green rhombic prisms; taste very astringent or styptic and without any odour, acid reaction, soluble in water (1 in 1·8), insoluble in alcohol. Dose—1 to 5 grs.

Preparations.—Ferri Sulphas Exsiccatus, B.P.—Exsiccated Ferrous Sulphate—Dried sulphate of iron. A purer form of sulphate of iron. To obtain it, heat ferrous sulphate on water bath. A grayish-white powder, soluble in water. Dose—½ to 3 grs. Ferri Sulphas Granulatus. To the boiling solution of ferrous sulphate 100, add dilute sulphuric acid 5 and alcohol 25; evaporate and crystallize. Pale bluish-green powder. Dose—1 to 5 grs.

Mistura Ferri Aperiens.—Contains sulphate of iron 4 grs., sulphate of magnesia 1 dr., dilute sulphuric acid 9 ms., peppermint-water 1 ounce. Pilula Aloes et Ferri, B.P. Dose—4 to 8 grs. Mistura Ferri Composita, B.P. Dose—½ to 1 oz. Pilula Ferri Sulphatis. Dose—3 to 5 grs. Pilula Ferri Arsenicalis. Contains arsenious anhydride gr. $\frac{1}{60}$, exsiccated ferrous sulphate 3, syrup ½. Mix. Dose—1. Pilula Ferri, B.P. Blaud's pill. Exsiccated ferrous sulphate 15, exsiccated sodium carbonate 9·5, gum acacia 5, tragacanth 1·5, syrup 15, glycerine 1, water 2. Dose—5 to 15 grs.

Kashisâdi Tel.—A native preparation, containing ferrous sulphate, hirakasi, kalâvi, katha, suntha, pipali, sindhava, manasila, kanera, vavadinga, chitraka, aduso, dantimula, karavi gisoli (Turâi), haratala, each one part. Make a paste in the milky juice of Euphorbium Thuvara (Kantaro), Calotropis Gigantea and Akada, to which add mithun tela, and boil.

Actions and uses.—Hæmatinic, emmenagogue, antiperiodic, anthelmintic, and disinfectant. In large doses poisonous. Locally astringent and stimulant; given in anæmia, chlorosis, amenorrhœa, leucorrhœa, enlarged spleen and intermittent fevers. In passive discharges and passive hæmorrhages it is combined with aloes and myrrh. As an emmenagogue it is given in amenorrhœa combined with belladonna and nux vomica and aloes; it relieves constipation and regulates the bowels. Its ointment is used in erysipelas and in certain skin diseases as eczema, impetigo, hæmorrhoids, chancres, prolapsus of the rectum, scrofulous and syphilitic sores. Kashisadi tela is used as an application by the natives in piles, fever and rheumatism. Ferrous sulphate is a cheap disinfectant for sewage. It precipitates the proteids.

Ferri Sulphidum.—Natural ferri sulphide.

Vernacular.—Bomb.—*Sonâ Mukhi-Dagadi*; Guz.—*Sonâ Mukhi-na gantha*; Hind.—*Sonâ Mukhi*; Sans.—*Suvarna Makshika*; Eng.—*Iron Pyritis.*

Two varieties, Sona Mukhi and Rupa Mukhi. Sona Mukhi is dark, yellow nodules with gold lustre and sweetish-bitter taste; often mistaken for gold pyrites. Rupâ Mukhi or Târâ Mukhi—Silver-like radiated crystals. Dose—$\frac{1}{4}$ to $\frac{1}{2}$ gr.

Preparation.—Sona Mukhi Bhasm.—It is prepared by the usual process of purification, reduction, &c.

Actions and uses.—Hæmatinic and alterative, combines the effects of iron with that of sulphide. It is used in scrofula, syphilis and enlarged glands, also in combination with pârâ kajali in consumption and piles.

Ferri Persulphas.—Ferric Persulphate—Normal ferric sulphate. —Boil together a solution of ferrous sulphate with sulphuric acid and nitric acid and evaporate. A dark reddish-brown salt, without any odour and of a styptic taste. Liquor Ferri Persulphatis, B.P.—A dark-brown solution. Sp. gr. 1·441.

Actions and uses.—Rarely used internally. Used as an ingredient in the preparations of Ferri et Ammoniæ Citras, Ferri et Quininæ Citras, Ferri Oxidum Magneticum, Ferri Peroxidum Humidum, Ferrum Tartratum, Tinctura Ferri Acetatis, Ferri et Ammoniæ Sulphas and Ferri et Ammonii Tartrate.

Ferrum Tartaratum, B.P.—Tartarated iron.—Tartrate of iron and potassium. Ferri potassio tartras—Potassio ferric tartrate. A compound of peroxide of ron with potash and tartaric acid.—Add to the solution of ferric sulphate, ammonia water, heat the precipitate with hot solution of acid tartrate of potassium. Thin, transparent garnet-red scales, without any odour and of a sweet ferruginous taste; soluble in water (1 in 4); sparingly soluble in alcohol. Contains 15 grs. of iron peroxide in 50 grs. Dose—5 to 10 grs.

Preparation.—Tinctura Martis (1 to 4). Dose—20 to 60 ms.

Actions and uses.—Hæmatinic and anthelmintic. Richest in iron, most agreeable and least constipating. Given in anæmia, chlorosis and worms.

Ferri Valerianas—Ferric Valerianate.—A dark-red or tile-coloured amorphous powder of valerianic odour and styptic taste. Insoluble in cold water; freely soluble in alcohol; decomposed by hot water. On the addition of boiling water it decomposes into ferric hydrate and valerianic acid. Dose—1 to 5 grs. in pill.

MANGANUM MANGANESE.

Manganese.—Never occurs free in nature. Found in the form of native crude peroxide or black oxide, or the carbonate. Traces of it are often found in the ashes of plants. It forms salts with potassium sodium, calcium, zinc, &c. Associated with iron, manganese is found in the blood. Occurs in crystals; of a black colour and metallic lustre.

Manganesii Oxidum Nigrum—Mangani Dioxidum—Manganese Dioxide; Peroxide of Manganese; Pyrolusite.

Vernacular.—Black oxide of Manganese; Chin.—*Mung-kur;* Hind.—*Kolsa-ka-pathar;* Tel.—*Iddali kalu.*

Heavy grayish-black gritty powder, without any odour or taste. Insoluble in water and in alcohol. Native crude oxide contains about 90 per cent. of manganese oxide, giving off oxygen gas at a red heat. Heated with hydrochloric acid it gives off chlorine gas. Dose—3 to 10 grs. Used for preparing chlorine water and permanganate of potassium.

Manganesii oxidum precipitatum, Manganesii oxidum preparatum. —To obtain it, treat black oxide of manganese with dilute hydrochloric acid, and wash. It consists principally of hydrated manganese oxide. A bulky brown powder, free from grittiness. Entirely soluble in hydrochloric acid. Dose—3 to 10 grs. Used in pills.

Preparation.—Pill. Contains Manganese Dioxide 2 grs., Podophyllin ½ gr., Fel. Bovinum 3 grs. Mix. Make one fill. Given in jaundice.

Physiological action.—Alterative and tonic. In small doses the salts of manganese are stimulant. They increase the activity of the stomach, improve digestion, and promote appetite. In large doses they are gastro-intestinal irritants, lower the heart's action, paralyse the muscular coat of the arteries, depress motor power and cause progressive wasting and paraplegia. They also give rise to degeneration of the liver. *Therapeutics.*—The black oxide is an efficient emmenagogue, generally given in combination with iron. It is occasionally used in anæmia, syphilis, scurvy and certain chronic skin diseases, as pruritis, &c. It is an acknowledged remedy in amenorrhœa, metrorhagia and in menorrhagia. It contains a large proportion of oxygen. As an excito-motor it increases the tone of the uterus. In pyrosis, gastrodynia, and gastralgia it acts as a sedative like bismuth and relieves pain. It is an excellent remedy in cases of jaundice due to malaria or to catarrh of the biliary passages. It assists in converting uric acid in the urine into urea and hence given in scarlatina, diphtheria, erysipelas, pyæmia, &c.

Manganesii Hypophosphis—Manganese Hypophosphite.—A pale, thick, granular powder or red crystals, soluble in water (1 in 10). Dose—1 to 10 grs.

Manganesii Iodidum—Manganese Iodide.—Deliquescent brown masses, soluble in water. Dose—1 to 3 grs. Used as an alterative and tonic, in anæmia, chlorosis, scrofula, syphilis and enlargement of spleen.

Manganese Peptonate.—Brown powder containing 4 per cent. of manganic oxide; soluble in water. Dose—20 to 60 grs. Liquor ferro manganesii peptonati. Dose—1 to 4 drs. Used as an alterative and tonic.

Iron and manganese are essential constituents of the blood. They are carriers of hæmoglobin, and cause an increase in the number of red corpuscles and the amount of hæmoglobin. They are rapidly absorbed in the blood, and are useful in anæmia, chlorosis, neurasthenia, Bright's disease, and rickets.

Manganesii Phosphas, Manganous Phosphate, Manganese Phosphate.—A white powder of a pinkish tint; insoluble in water. Dose—½ to 5 grs. Sometimes added in syrup of ferrous phosphate.

Manganesii Sulphas, Manganous Sulphate, Manganese Sulphate.—A white or pinkish powder or large crystals, soluble in water (1 in 0·8), insoluble in alcohol. Dose—As a tonic 1 to 5 grs.; as a purgative 30 to 60 grs. Used as tonic and cholagogue purgative and emetic, given in jaundice of malarial origin, constipation, torpor of the liver with catarrh of the biliary passages and general debility. It is not largely used.

CHROMIUM.

It is never found free in nature, but exists in a state of oxide in combination with protoxide of iron, as chrome iron ore or chromite.

Acidum Chromicum—Chromic Acid, B.P. Syn.—Chromic Trioxide, Chromic Anhydride.—To obtain it, add strong sulphuric acid to a concentrated solution of potassium bichromate. Occurs as small deliquescent needles or rhombic prisms of a crimson colour and metallic lustre, quite odourless. It is an oxidizing agent, acting corrosively on the skin; destructive to animal and vegetable organism. It is very soluble in water and ether. It melts at a very high heat and decomposes with the evolution of oxygen gas. Warmed with hydrochloric acid, chlorine is evolved. Mixed with alcohol, aldehyde is produced. It decomposes organic substances: hence when placed in contact or triturated with alcohol, cork, glycerine, nitric ether, sugar, tannin, &c., it causes sudden combustion or explosion; used as Liquor Acidi Chromici, B.P. (1 to 3 of water); lotion (1 in 10) and paste.

Physiological action.—Astringent, antiseptic oxidizer, disinfectant and a powerful eschoratic. Internally it is a violent irritative corrosive poison, causing vomiting, bloody stools, severe abdominal pain, depression of the heart, often cardiac failure, coma and death; as an escharotic it penetrates deeply, but is not very painful; it coagulates albumen. It oxidizes organic matter and decomposes it into ammonia and sulphuretted hydrogen. *Therapeutics.*—A weak solution (1 in 4) is applied externally with a glass rod to growths on the genitals, to lupus and (1 in 40) to ulcers in the mouth, gums, tongue, palate, throat, nasal passages, also vagina, cervix uteri, &c. As an eschoratic its paste is applied to destroy secondary syphilitic growths, warts, tubercles, condyloma and other excrescences; also enlarged tonsils, hæmorrhoids, gangrenous ulcers, poisoned wounds, bites

of rabid animals, lupus, tinea tonsurans &c., As an antiseptic and deodorizer its lotion or injection (1 in 40) is used in putrid sores, in chronic gonorrhœa, leucorrhœa, uterine hæmorrhages and other fœtid discharges from the nose, vagina, &c. For sweating feet from 5 to 10 per cent. solution is beneficial. It is a good application on warty excrescences on the penis. As an antiseptic wash (1 in 4,000) is useful in putrid sores and syphilitic affections of the mouth, tongue, throat, &c.

Zincum. Zinc, B.P.—Zinc.

Habitat.—India, China, Belgium.

Vernacular.—Eng.—*Spelter;* Beng.—*Dasta;* Can.—*Sattu;* Duk.—*Jas, Sang-busari;* Hind.—*Jasta;* Guz.—*Jasad.;* Chin.—*Talenague;* Malyal.—*Nagam, Tambaga-putch;* Sans.—*Tuttinaga;* Tam.—*Tuta-nagam;* Tel.—*Tuttu nagam.*

Never occurs free in nature, but exists variously combined with elements to form salts. It exists combined with oxygen as red oxide with carbon as an impure carbonate, with sulphur as sulphide or sulphuret (Blende), or with silica as silicate. To obtain it, sublime carbonate or the oxide of zinc with charcoal. A bluish-white crystalline metal, with considerable lustre; soluble in the weakest acids.

Granulated Zince.—To obtain it, fuse zinc metal, then pour on it a thin stream of cold water. It becomes brittle and may then be reduced to a fine powder. Occurs in thin sheets or irregular granulated pieces, or moulded thin pencils or fine powder; used in the preparation of chloride and sulphate of zinc.

Actions and uses.—The soluble zinc salts, such as the sulphate, acetate, chloride and iodide, are corrosive irritants. In large doses they give rise to symptoms of corrosive poisoning like arsenic. In small doses they are astringents, but milder than the lead salts. If continued for a long time, they produce symptoms similar to those of lead. They are rapidly eliminated by the liver and intestinal glands.

Zinci Acetas, B.P.—Zinc Acetate.—Dissolve zinc carbonate in acetic acid, boil and crystallize. Colourless, translucent, crystal line plates of a pearly lustre with a faint acetous odour and astringent, sharp, unpleasant taste, slight alkaline reaction, soluble in water (1 in 2·5), in alcohol (1 in 36). Dose—1 to 2 grs. as a tonic; 10 to 20 grs. as an emetic. Used as a wash (1 to 1,000), gargle (5 to 1,000), injection (2 to 1,000).

Actions and uses.—In small doses astringent and irritant; in large doses emetic; used in erysipelas, diarrhœa, delirium and typhoid fever. Externally as a lotion for collyrium in conjunctivitis and as an injection in gleet, leucorrhœa and gonorrhœa, as gargle in sore throat, and as lotion in eczema and other chronic skin diseases.

Zinci Boras—Zinc Borate.—Dissolve carbonate of zinc in boric acid. A white amorphous powder, used as ointment in eczema.

Zinci Bromidum.—Syn.—Zinc bromide.—Obtained by the action of hydrobromic acid on granulated zinc. Another method.—Digest zinc, bromine and water together and evaporate. White, granular, highly deliquescent powder, without odour and of a sharp saline taste; soluble in water, alcohol, ether and ammonia. Dose—3 to 10 grs.

Actions and uses.—Nervine tonic, antispasmodic and hypnotic; used in chorea, hysteria, ovarian irritation and other spasmodic diseases, dependent upon nerve irritation where the combined action of bromides and zinc salts are required. In epilepsy it is given with very satisfactory results as it diminishes sensation and causes sleep.

Calamina præparata.—Lapis Calaminaris præparatus.

Vernacular.—Eng.—*Impure prepared calamine*; Bomb.—*Sang-i-basari*; Guz.—*Khaparia*; Hind.—*Kala khâparo.*

To prepare it calcine native calamine (zinc sulphate and carbonate) and reduce it to a powder. An impalpable powder or a fine flesh-coloured or grayish-black or porous earthy mass or agglutinated granules, very brittle and composed of impure oxide of zinc and silica. In shape it resembles pieces of broken white clay pipe. It is without any odour and without taste, insoluble in water, soluble in dilute sulphuric acid with effervescence.

Used as dusting powder. As a lotion—Levigated calamine 40 grs., zinc oxide 20 grs., glycerine 20 ms., rose water 1 oz.—used in eczema; in acne 1 gr. of bichloride of mercury may be added to 6 ozs. of the lotion.

Preparations.—Ceratum Calaminæ—Turner's cerate.—It contains calamine and yellow wax, each 15 parts, and olive oil 40 parts. Linimentum Calaminæ—Calamine 20 grs., zinc oxide 15 grs., lime water 4 drs., and olive oil 1 ounce. Unguentum Calaminæ—Calamine 1, zinc oxide 2, and benzoated lard 5. Khâpara Bhashma.—To prepare it, take calamine, lâkh, halad, haradân, râl, tankan khâr—equal parts; make a fine powder, then add butter and reduce the whole to the consistence of jelly; then heat the mass over a fire till reduced to

ashes. Dose—¼ to 2 grs. Khâpara Anjana.—To prepare it, add calamine to decoction of triphala and stir; then add sulphate of copper, rock salt and borax. Mix well, dry over a sand bath, and make into moulds. Compound Khâpara powder—Jvârârasa or bang-i-rasa.—Take calamine, para kajali, orpiment, sulphate of copper, tankan khâr, and sulphur—equal parts, and reduce to powder. Dose—¼ to 1 gr.

Actions and uses.—As an ointment or as a dusting powder it is soothing, protective and astringent; used as an application to abrasions and to inflamed skin; as a lotion with mercury bichloride ⅛ gr. to each ounce of lotion for eczema and acne. Native vayids use calamine as a nervine tonic and alterative like oxide or carbonate of zinc. The compound powder is given in syphilis, scrofula, &c. The cerate is a useful application for burns.

Zinci Carbonas, B.P.—Zinc Carbonate. Precipitated zinc carbonate or zinc hydroxycarbonate.—To obtain it, decompose zinc sulphate with sodium carbonate. A white powder without any odour or taste, insoluble in water, entirely soluble in dilute nitric acid with copious effervescence. Dose—2 to 10 grs. Used as ointment 20 per cent. or as dusting powder.

Actions and uses.—Nervine tonic, locally astringent. Internally given in chronic alcoholic poisoning, epilepsy, hysteria, &c., and preferred to the oxide in skin diseases. Applied as ointment or dusting powder to wounds, ulcers, burns, scalds and excoriations, also used as a face powder.

Zinci Chloridum, B.P.—Zinc chloride, Butter of zinc.—Dissolve granulated zinc in hydrochloric acid. Very deliquescent colourless opaque rods, tablets, granular powder, or moulded pencils, without any odour, caustic or metallic astringent taste, soluble in water (1 in 3), also in alcohol and ether. Used as an injection 1 gr. to 1 oz. of water. Solutio zinci chloridi antiseptica (1 in 11).

Preparations.—Collodium Salicylicum cum Zinci Chlorido.—Contains salicylic acid 2, zinc chloride 1, and collodion 15—a clear solution. Guttæ Zinci Chloridi (2 grs. to 1 ounce of water). Guttæ Zinci Chloridi cum Cocaina.—Contains zinci chloridi 2 grs., cocaine hydrochloride 10 grs. to water 1 oz. Pasta Zinci Chloridi.—Contains zinc chloride 16 ozs., powdered opium 1½ oz., hydrochloric acid 6 drs., water 1 pint. To the mixture add wheat flour (4 to 1) and heat on a water bath. Liquor Zinci Chloridi, B.P.—Similar to Burnet's disinfecting fluid. Contains granulated zinc 1 lb., hydrochloric acid

44 ozs., distilled water 2 pints. Sp. gr. 1·530. It contains about 3 grs. of the solid zinc chloride in 4 ms. of the solution. It is a clear liquid, of a sweet astringent taste, without any odour. On diluting it with water it forms a white precipitate, the precipitate being re-dissolved by hydrochloric acid. Darts of zinc chloride with equal weights of guttapercha are made for insertion into wounds.

Actions and uses.—Zinc chloride is a powerful and painful escharotic, alterative, antiputrescent and antiseptic. As an escharotic it has great affinity for water, coagulates albumen and shrivels the tissues to which it is applied. The paste is locally applied for the destruction of cancerous, malignant and other morbid growths and of lupus, for opening deep-seated abscesses, to stimulate the ulcers of the uterus and for the removal of nasal polypi. The cuticle should be first removed by ammonia water before the paste is applied. The liquor is used as an injection (1 in 1,000) in gonorrhœa, leucorrhœa, &c. For its deodorant and disinfectant properties it is used as a wash (1 in 500) for fœtid discharges. As a general disinfectant, the solution, 5 to 10 per cent., injected in tuberculosis into the tubercular tissue, causes fibrous induration of the part, preventing the spread of the disease. Dose—It should be injected in 2 or 3 ms. doses in a number of places round the periphery of diseased part, about the arm, in cancer of the tongue, &c.

Zinci Citras—Zinc citrate.—To obtain it, saturate the solution of zinc carbonate with citric acid. A basic salt, met with as amorphous white powder of a sharp metallic taste, sparingly soluble in water. Dose—3 to 12 grs. As an antispasmodic, given in epilepsy.

Zinci Cyanidum—Zinc cyanide.—A white powder, insoluble in water. Dose—$\frac{1}{16}$ to 1 gr.

Actions and uses.—Alterative, antiseptic and anthelmintic ; used in chorea, rheumatism, neuralgia, gastralgia, colic, &c. As a cardiac sedative like digitalis it relieves pain, irregularities and palpitation of the heart.

Zinci et Potassi Cyanidum.—A soluble cyanide. Dose—$\frac{1}{10}$ to 1 gr.

Actions and uses.—Similar to hydrocyanic acid.

Zinci Lactas—Zinc lactate. White crystalline pieces of sharp metallic taste ; soluble in water (1 in 60). Dose—3 to 30 grs. As an anti-epileptic and nervine sedative. Used in epilepsy. It does not derange the stomach.

Zinci Ferro Cyanidum—Zinc Ferro-cyanide.—Fuse zinc carbonate with animal refuse and iron scrapings. Evaporate and crystallize. A white powder. Dose—½ to 2 grs. As an antiseptic and alterative. Given in dysmenorrhœa, chorea, gastralgia, and rheumatism.

Zinci Hemol.—A dark-brown powder, containing hemol with 1 per cent. of zinc, sparingly soluble in water. Dose—5 to 8 grs. As an hæmatinic. Used in anæmia, chlorosis, and in gastric or intestinal affections.

Zinci Hypophosphitis—Zinc Hypophosphite.—Used as syrup 8 grs. to 1 ounce of syrup. Dose—1 to 2 drs. It is readily assimilable. Given in nervous debility and in atony of the stomach.

Mercuro Zinc Cyanide.—To obtain it, add to the saturated solution of cyanide of mercury and cyanide of potassium a saturated solution of zinc sulphate, and collect the precipitate and evaporate. Another method.—Add saturated solution of mercuric chloride to a solution of zinc cyanide and potassium cyanide. A white powder. Used as cream. Prepared by triturating the powder in carbolic lotion 1 in 20. Mercuro Zinc Cyanide Gauze contains 3 per cent. by weight of mercuro zinc cyanide.

Zinci Nitras—Zinc nitrate.—Neutralize nitric acid with zinc carbonate or act upon zinc chloride with sodium nitrate. A deliquescent crystalline mass. Used as a caustic like zinc, chloride causes less pain.

Oleatum Zinci.—Mix zinc oxide 1 and oleic acid 9, and heat together. A white powder of a soft silky feel, resembling French chalk.

Preparations.—Unguentum zinci oleatis contains precipitated oleatum zinci and soft paraffin—equal parts. Used in eczema. Unguentum oleatorum, composed of zinc oleate ointment 2, diachylon ointment 2, mercuric oleate (10 per cent.) 1, and soft paraffin 1. Charta Zinci.—Tissue paper, impregnated with zinc oleate; used as a stimulant to long-standing chronic ulcers and sores left after burns.

Zinci Oleas—Zinc oleate. Precipitated zinc oleate.—Prepared by the action of sulphate of zinc 8 on a boiling solution of hard soap shavings 16. A white powder of a soft, silky feel, resembling French chalk. Unguentum Zinci Oleatis, B.P.—Precipitated zinc oleate 1, soft paraffin 1. Used in chronic eczema.

Actions and uses.—Non-irritant, absorbent. Zinci oleas is used as a dusting powder in vesicular eczema, often mixed with kaolin or starch and perfumed with thymol (1 in 500), used in hyperidrosis or night-sweating of phthisis.

Zinci Oxidum, B.P.—Zinc oxide.

Vernacular.—Pers.—*Tutia ;* Hind.—*Putty ;* Eng.—*White Zinc, Flowers of Zinc ;* Guz.—*Jasata Bhasm.*

Obtained by roasting carbonate of zinc or by combustion of metallic zinc. An amorphous, white, tasteless, inodorous powder of a pinkish white color changing to pale yellow by heat. Insoluble in water, soluble, without effervescence, in dilute acids and in ammonia water. Dose—3 to 10 grs. in pills. The powder is used for toilet purposes, mixed with various starches, powdered orris root, and perfumed with scents.

Preparations.—Unguentum Zinci, B.P. (3 in 20). Zinc oxide 3, and benzoated lard 17. Unguentum Zinci Compositus.—Contains zinci oxidum and subacetate of lead with glycerine and lard. Gelatum Zinci—Gelatine 2, water 8, glycerine 6, and zinc oxide 3. Application to eczema. It may also be used as a basis for iodoform, chrysarobin, carbolic acid, salicylic acid, ichthyol, resorcin, napthol 10 per cent., balsam, ichthyol 20 per cent. and tars. Cremor Zinci—Zinc oxide 3, with vaseline 17, perfumed. Salve Mulls.—One grain of zinc oxide to every square inch alone or combined with ichthyol or with red oxide of mercury. Lassar's Paste—Zinc oxide 24, starch 24, salicylic acid 2, vaseline 50, for eczema. Pilula zinci cum belladonna.—Zinc oxide 2 grs., extract of belladonna $\frac{1}{8}$ gr. Dose—1 to 2 pills at bed-time. Pulvis zinci et amyli—Zinc oxide 1 and starch 2. Pulvis zinci et hydrargyri sub-chloridi—Zinc oxide, calomel, tannic acid and starch—equal parts.

Actions and uses.—Externally a mild, soothing, astringent and desiccant. Internally a nervine sedative, astringent and antispasmodic. Given in epilepsy, chorea, certain forms of neuralgia, hysteria, dipsomania and in some spasmodic affections as asthma and whooping cough. For its astringent property it is given in bronchorrhœa, in colliquative sweats of phthisis, leucorrhœa and gonorrhœa, and with bismuth and pepsine in later stages of chronic diarrhœa and dysentery, also in gastralgia. Externally as desiccant powder or a soothing astringent it is used in intertrigo, coryza, and ozœna. As an ointment it is applied to wounds, ulcers, vesicular eczema, excoriations, bed sores, chronic skin diseases, burns, &c.

A native preparation of impure oxide of zinc, Tutanag passain, is given in gonorrhœa, leucorrhœa, spermatorrhœa, with benefit. With jatamansi it is given in epilepsy with good results.

Zinci Permanganas.—Zinc Permanganate.—Fuse dioxide of manganese with zinc carbonate or zinc chloride. Dissolve the resulting manganate of zinc in water, and act upon the solution with sulphuric or carbonic acid.

Deliquescent reddish purple crystals : soluble in water. Used as lotions and injections (1 in 10).

Antiseptic and astringent. It is similar to permanganate of potash.

Zinc Sozoiodol—Zinc diodo paraphenol sulphonate.—Colourless needles, freely soluble in water (1 in 25), alcohol and glycerine. Used as insufflation 5 to 10 per cent. triturated with milk sugar ; ointment (5 to 10 per cent.) ; paint (3 to 5 per cent.) ; solution ½ to 1 per cent. ; gargle 1 to 2 per cent.

Actions and uses.—Antiseptic, astringent. Given internally in gonorrhœa and nasal catarrh ; externally as insufflation in pharyngitis, as a gargle in sore throat, as an injection in gonorrhœa and as an ointment in skin diseases.

Zinci Subgallas—Zinc subgallate.—A greenish powder without any odour, non-toxic, and non-irritant. Insoluble in ordinary solvents ; contains 44 per cent. of zinc oxide and 46 per cent. of gallic acid. Dose—½ to 4 grs. Used as injection (1 in 16) ; ointment 1 in 8 ; dusting powder.

Actions and uses.—Local astringent. Used as dusting powder in eczema, septic wounds and hæmorrhoids ; as an injection 1 in 16 of mucilage in gonorrhœa. Internally, in chronic diarrhœa.

Zinci Sulphas, B.P.—Zinc sulphate.

Vernacular.—Eng.—*Sulphate of Zinc, White Vitriol, Zinc Vitriol ;* Can.—*Bile Tutya;* Cing.—*Sudu Tuttam ;* Duk.—*Sufed Tutta ;* Hind. —*Jasadna Phula, Sufed-thu-thah ;* Malayal.—*Tutam;* Tam.—*Pal Tuttam ;* Tel.—*Palu Tullam.*

Obtained by the action of dilute sulphuric acid on zinc. Colourless, transparent, rhombic crystals, similar in appearance to those of Epsom salt ; of an astringent metallic taste and without any odour ; soluble in water (1 in 0·6), glycerine (1 in 3), and insoluble in alcohol. Dose—As a tonic and astringent 1 to 3 grs. ; as an emetic, 10 to 30 grs.

Preparations.—Collyrium Adstringens Luteum.—Ammonium chloride 5, zinc sulphate 12½, aqua 2,000. Add camphor 4 dissolved in dilute spirit 200, then add saffron. Lotio Rubra—Red lotion. Zinc sulphate 2 grs., compound tincture of lavander 15 ms., water 1 oz. Red Lotion Pastils are prepared to produce this lotion. Lotio Sulphatum.—Zinc sulphate 30 grs., ferrous sulphate 20 grs., copper sulphate 2 grs., alum 30 grs., water 8 ounces. Ophthalmic discs—Containing $\frac{1}{250}$ grs. each of zinc sulphate and opium. Points of zinc sulphate alone or combined with alum or copper sulphate are prepared for intra-uterine medication.

Actions and uses.—In small doses tonic and astringent, in large doses emetic and antispasmodic. In very large doses poisonous. As a tonic and antispasmodic it is used in chorea, epilepsy, spasmodic asthma, angina pectoris, and whooping cough. As an astringent it is given in chronic diarrhœa and chronic dysentery. It is a stimulant emetic and largely used in cases of narcotic poisoning, in croup and in chronic bronchitis and after a heavy meal. Locally, it is used as an astringent to the mucous membranes and generally as a lotion and injection in ophthalmia, gleet, leucorrhœa, &c. In a dry state it acts as a caustic.

Zinci Sulphis—Zinc Sulphite.—Mix together solution of sulphate of zinc and sulphite of sodium. Zinc sulphite is deposited. As a white crystalline powder, soluble in water (1 in 600). Used as a zinc sulphite gauze. It is a non-poisonous, non-irritating antiseptic; it liberates sulphurous acid.

Zinci Sulphocarbolas, B.P.—Zinc sulpho-carbolate, zinci-phenol-para-sulphonate.—Heat a mixture of carbolic and sulphuric acid and saturate the product with zinc oxide. Colourless, transparent, tubular crystals; soluble in water (1 in 2) and in alcohol (1 in 2·5). Dose—1 to 2 grs. Used as injection 2 to 3 grs. to an ounce.

Actions and uses.—Astringent and antiseptic. Used locally as a gargle or spray or pigment applied with a probang in catarrhal affections of the throat; also used as an injection for gonorrhœa and leucorrhœa. It forms a valuable nasal douche in ozœna and foul ulcers. Internally it is given in typhoid fever and fermentative diarrhœa.

Zinci Phosphidum—Zinc phosphide.—Pass the vapour of phosphorus and hydrogen gas over fused zinc. Contains 25 per cent. of phosphorus. A gritty, dark-gray powder, or crystals, or fragments of dark metallic lustre with a faint odour and of a phos-

phorus taste; insoluble in water and alcohol. It is not oxidized by trituration. Dose—$\frac{1}{16}$ to $\frac{1}{4}$ of a grain. Pilula zinci phosphidi—Formed by levigation with milk sugar and glycerine of tragacanth. $\frac{1}{8}$ gr. in each.

Actions and uses.—A powerful nervine tonic and aphrodisiac; given in seminal debility, nervous exhaustion, epileptiform vertigo, neuralgia, tic douloureux, hemicrania, melancholia and chronic skin diseases; also in pernicious anæmia and leucocythemia.

Zinci Valerianas, B.P.—Zinc Valerianate—zinc-iso-valerianate.—Mix together hot solutions of sulphate of zinc and sodium iso-valerianate, evaporate and crystallize; or act upon carbonate of zinc with iso-valerianic acid. White, pearly scale of valerianic acid odour and a sweet astringent taste, acid reaction, soluble in water (1 in 100), and in alcohol (1 in 40). Decomposes on exposure to the air. Dose—1 to 3 grs.

Preparation.—Pilulæ Trium Valerianatum. Contain valerianate of quinine, iron and zinc. Pilula zinci valerianatis—Zinc valerianate 1 gr. and compound pill of asafœtida 2 grs.

Actions and uses.—Antispasmodic and nervine tonic; used in neuralgia, nervous headache, nervous cough, epilepsy, vertigo, chorea, hysteria, whooping cough, aphonia due to uterine or ovarian irritation, and in diabetes insipidus. It the prevents recurrence of attacks of hay fever.

CADMIUM.

A white metal, malleable and ductile. Met with in nature as sulphide in zinc ores. It resembles in its physiological action both zinc and antimony, being escharotic, astringent and depressing emetic. Its salts are irritant poison, never given internally, leading to cerebro-spinal symptoms, such as coma, convulsions and death.

Cadmii Iodidum—Iodide of cadmium.—Prepared by the combination of iodine and cadmium; large flat crystals, white, and of a pearly lustre; form amber-coloured fluid when heated to 600° F. Freely soluble in water and in rectified spirit. Used as unguentum cadmii iodidi (1 to 8). Externally applied as a stimulant for enlarged scrofulous glands, chronic joint affections, nodes and skin diseases.

Cadmium Salicylas.—Colourless shiny needles. Taste sweet and astringent. Soluble in glycerine, alcohol and ether, insoluble in

chloroform and benzene. Contains 29 per cent. of cadmium. Astringent. Used as injection in gonorrhœa, also used in purulent ophthalmia, conjunctivitis, keratitis, &c.

Cadmium Sulphate.—Obtained by the action of sulphuric acid on cadmium. White crystals, soluble in water and alcohol. An antiseptic and stimulating astringent. Used in gonorrhœa as a solution ¼ gr. to 1 ounce, as injection and as eyewash in place of sulphate of zinc 2 grs. to an ounce.

ARGENTUM—SILVER.

Met with free in nature diffused throughout the mineral kingdom, also as sulphide, often met with alloyed with other metals as gold, arsenic, copper, &c. With lead sulphide it is found as argentiferous galena.

Vernacular.—Arab.—*Fasseh, Faddah;* Burm.—*N'gway;* Cing.—*Peddi;* Guz.—*Rupun, Châ̂ndi,* the leaf *Ruperi Varaka;* Hind.—*Rupa, Chandi;* Mahr.—*Rupecha Varaka;* Malay.—*Perak, Salaka;* Maleal.—*Riaki;* Pers.—*Varkharsima, Nokra;* Sans.—*Sveta, Rajata, Tara patra;* Tam.—*Velli;* Tel.—*Vendi.*

A soft, whitish, brilliant, sonorous, ductile metal, a good conductor of heat and electricity. Its chief solvent is nitric acid. Used as silver leaf.

Refined silver—Argentum purificatum.

Silver ash.—*Rupa Bhashma;* Guz.—*Rupani Khaka;* Sans.—*Tara Bhashma.*—Add limejuice to powdered orpiment, make another paste of powdered pomegranate bark, powdered leaves of acacia in the juice of kumara (aloe leaves), mix both pastes together to make a bolus. In the centre of this bolus put a ball of pure refined silver leaves and cover the whole with earth or clay, then roast and calcine. Dose—⅛ to ½ gr.

Actions and uses.—The silver salts are antiseptic, astringent, and locally irritant, more powerful than the salts of lead, but less so than those of mercury. Nitrate of silver is a good disinfectant, but is precipitated by the chlorides and proteids. The soluble salts of silver are hepatic and nervine tonics; they increase the tissue, change and promote the secretion of bile. In large doses they affect the general nutrition, but not the assimilation; they depress the heart and respiratory centre, and lower the blood-heat. In toxic doses they give rise to convulsions or paralysis. In workers in artificial pearls who use silver as a pigment, the long use of silver

gives rise to a condition of the system known as argyria which is characterized by a slate-coloured line round the margin of the gums, which are swollen. The skin and the mucous membrane are covered over with greyish coloured patches which soon become slate-coloured. This pigmentation is due to the deposit of silver in the connective tissues of the skin, chiefly in the corium.

Argenti Chloridi—Silver Chloride.—A white powder, blackening on exposure to light. Soluble in ammonia, potassium thiosulphate and potassium cyanide. Dose—½ to 2 grs. Used as an antiseptic, and nervine sedative in chorea, epilepsy, whooping cough, and in other neurotic affections.

Argentum Colloidale—Collargolum—Soluble metallic silver—Dose—⅓ of a grain. Used as ointment (10 in 100). As a non-irritant and antiseptic. Used in erysipelas, lymphangitis, cellulitis, &c. Solution is used in conjunctivitis.

Argenti Citras—Itrol—Silver citrate.—A white colourless powder without any odour, sparingly soluble in water 1 in 4,000. Used as injection (1 to 2,000); as ointment 1 to 2 per cent.

Actions and uses.—Antiseptic, disinfectant and germicide. It has a powerful destructive action on gynococci; it is a non-irritant of the urethral mucous membrane, does not injure the tissues and has a deep reaching power, hence preferred to silver lactate. In acute and chronic gonorrhœa and chronic cystitis its solution is an efficient injection. The ointment is used for wounds and skin diseases.

Argenti Cyanidum—Silver Cyanide.—A yellowish-white powder soluble in solution of potassium cyanide, and sodium thiosulphate. Dose—¼ to ½ of a grain. As an antiseptic and sedative; given in epilepsy and chorea.

Argenti Iodidi—Silver Iodide.—Greenish-yellow shining plates. Soluble in solution of potassium iodide, or potassium cyanide, also of ammonium thiosulphate. Insoluble in water. Dose—¼ to 1 gr. As an alterative. Given in gastralgia, syphilis, &c., as a substitute for argenti nitras.

Argenti Nitras, B.P.—Silver Nitrate.

Vernacular.—Eng.—*Nitrate of Silver, Lunar Caustic;* Hind.—*Kadi Khar.*

Dissolve refined silver in nitric acid by heat, evaporate and crystallize. Colourless, tabular, transparent, rhombic prisms or cylindrical rods, becoming black by exposure to light, without any odour and of a bitter caustic taste. Soluble in water (1 in 0.6) and in alcohol (1 in 26); also soluble in ether and chloroform. Always given with water or in pill with kaolin, never with tannin or any vegetable extract, lest an explosive compound results. Dose—$\frac{1}{4}$ to $\frac{1}{2}$ gr.

Preparation.—Argenti Nitras Induratus, B.P.—Toughened caustic. —Take silver nitrate 475 grs. and potassium nitrate 25 grs., fuse and pour into proper moulds. White or greyish-white cylindrical rods or cones, freely soluble in water and sparingly so in alcohol.

Argenti Nitras Mitigatus, B.P.—Mitigated caustic; argenti et potassii nitras, nitrate of silver and potassium. Argenti nitras dilutus, diluted silver nitrate.—Fuse together nitrate of silver 1 part with potassium nitrate 2 parts and mould into a pencil. A white or greyish-white cylindrical rod or cone, freely soluble in water, sparingly so in alcohol. Used as a solution, 2 grs to 1 oz., and as hair dye. Ophthalmic discs of silver nitrate $\frac{1}{500}$ gr. in each. Pigmentum argenti nitratis æthereum, containing silver nitrate 20 grs., water 1 dr. and spirit of nitrous ether 1 oz.

Physiological action.—Locally antiseptic, astringent, hæmostatic, irritant, caustic and escharotic. Internally tonic, antispasmodic, astringent and antiphlogistic. A weak solution applied to a denuded skin causes contraction of the vessels. A strong solution acts as a caustic, irritates the part, coagulates the albumen of the tissue, and forms a thick coating of albuminates which is white at first but soon becomes black. Internally in small doses it acts as a nervine tonic. It stimulates the heart and promotes nutrition. *Therapeutic uses.* —As a sedative and astringent in small doses it is given in weak and irritable stomach, depressed spirits, persistent vomiting, subacute gastritis, pyrosis, gastric ulcers, gastric malignant affections and hæmatemesis; also given in intestinal ulcers, epidemic dysentery and cholera.

It should always be given on an empty stomach. In large doses it is an irritant of the mucous membrane of the alimentary tract leading to corrosion and ulceration. It causes burning in the throat with nausea, vomiting, and often purging, followed by collapse, coma, convulsions, and death from paralysis of the respiratory centre. As a nervine tonic it is exhibited in mercurial palsy, chorea, epilepsy, hysteria, locomotor ataxy and in inflammatory affections of the spinal chord. Externally the stick is applied to stimulate foul phagedenic

ulcers, chancres, to cut down exuberant granulations and to heal sores, sinuses, &c., also to stop bleeding from leech bites, &c. As an injection of various strengths it stimulates the mucous membranes, diminishes the discharges and renders them more healthy, and hence it is used in gonorrhœa, gleet, leucorrhœa, catarrhal inflammation of the bladder and also as a spray in tonsillitis, diphtheria, croup, whooping cough, sore throat, aphonia, aphthæ, involuntary emissions, and in enlarged prostate. A solution of 40 grs. to a pint of water is injected into the bowels in inveterate cases of chronic dysentery. As an antiseptic in ophthalmic practice it is largely used as eye drops. In chronic purulent discharge from the middle ear ¼ per cent. solution if applied to the tympanum is a valuable remedy. In polypi in the ear and in external otitis, 5 to 20 per cent. solution is very useful. In skin diseases it destroys parasitic fungi, and in eczema, prurigo and lichen it relieves itching. It is also used to prevent pitting as in small-pox. In lupus, ringworm and erythema the solution has been applied with marked relief; as an escharotic it is used to destroy corns, warts, &c. As a cautery it is applied in cases of poisoned bites and stings of rabid animals or snakes. The surface should be thoroughly cauterized.

Argenti Oxidum, B.P.—Silver oxide.—Prepared by the action of calcium hydro-oxide on a solution of silver nitrate. A brown powder, becoming black by age, insoluble in alcohol and partially soluble in water, decomposes when mixed with combustible or readily oxydizable substances, as creosote, phenol, &c. Dose—½ to 2 grs. given with kaolin in pills or capsules. Used as unguentum argenti oxydum 40 grs. to 1 oz.

Actions and uses.—Nervine tonic, aphrodisiac and anthelmintic, like nitrate of silver, but less irritating. Can be used for a longer time without causing discoloration of the skin. Among the natives silver bhasm is extensively used as an aphrodisiac in combination with other nervine tonics and confections; also as a sedative in hæmatemesis, ulceration of the stomach, dyspepsia, gastralgia, pyrosis. In uterine and pulmonary hæmorrhages and in menorrhagia it is very beneficial. It is used to check vomiting, profuse sweating and diarrhœa depending on reflex nervous irritation. The ointment is applied to syphilitic and other obstinate ulcers and to the urethra in gonorrhœa.

Oleatum Argenti—Oleate of silver.—Is useful in chronic ulcers, old sores and exuberant granulations. Unguentum argenti oleatis contains 10 to 60 grs. of the oleate to 1 oz. of lard. It is employed to relieve itching and as an application in erysipelas.

Silver and Sodium Hyposulphite.—It is very soluble in water, does not coagulate albuminum, does not stain the skin or the clothing. Dose—½ to 3 grs. internally, ⅛ to ⅓ gr. hypodermically. Used as solution hypodermically, and given internally in locomotor ataxia. Also locally applied to the throat.

Argenti Sulphocarbolas.—Silver sulpho-carbolate. Prepared by double decomposition between silver carbonate and sulpho-carbolic acid. White, prismatic needles, containing silver 28·29 per cent. Used as solution 1 in 500. As an antiseptic injection in gonorrhœa. Other properties are similar to those of itrol and argonin.

ARSENIC—ARSENIUM.

The metal arsenic is widely distributed in nature, but in small quantities. With one equivalent of oxygen it forms arsenious acid; with two equivalents, arsenic acid. With sulphur it forms various sulphides, red orpiment, yellow orpiment or realgar, and kala sambul; with iodine it forms arsenic iodide. With metals it forms various compounds known as metallic arsenide. With iron pyritis it forms arsenical pyritis or mispickel; with copper Scheele's green; with cobalt, glance (a compound of arsenide and sulphide of cobalt), and with tin, white tin or arsenite of tin.

It is a crystalline, brittle metal, of a steel-dark colour and of a metallic lustre, not capable of being flattened or elongated by the hammer without tearing or breaking. It volatilizes below a red heat. The vapour is of a strong garlic odour. On roasting, the ore is oxidized into arsenious anhydride.

Acidum Arseniosum, B.P.—Arsenicum album, arsenic trioxide, arsenic white oxide, white arsenic, anhydrous arsenious acid, arsenious anhydride.

Vernacular.—Eng.—*Arsenious Acid, White Oxide of Arsenic, Flowers of Arsenic;* Arab.—*Turabūl, Halil, Sumul-far, Zarnik-Shuk;* Burm.—*Tein, Hpy-so;* Beng.—*Sumbul Khar;* Can.—*Phashana;* Cing.—*Sudu Pasanam;* Duk.—*Saféd Sambul Khar;* Guz.—*Somal Khar;* Hind.—*Sanchya;* Malyal.—*Waranganpulih;* Pers.—*Sambul-far;* Sans.—*Sveta-pasanam, Sankha-visha;* Tam.—*Vella-pashanam, Ar;* Tel.—*Tela-pashanam.*

Roast native arsenical ores as arsenates of iron, nickel or cobalt, when commercial arsenious acid is obtained as a by-product. This is sublimed. Met with as a solid, heavy, white powder or stratified masses, or minute transparent and glass-like crystals without any

taste, soluble in water (1 in 100), in boiling water (1 in 10), very slightly soluble in alcohol, in alkalies and their carbonates, and in hydrochloric acid, and soluble in glycerine (1 in 5). It volatilizes without melting and emits an alliaceous odour. Dose—$\frac{1}{60}$ to $\frac{1}{15}$ of a grain.

Preparations.—**Liquor Arsenicalis, B.P.**—Solution of potassium arsenite—Liquor Potassæ Arsenitis. Fowler's solution (1 in 110). —Contains arsenious anhydride 87½ grs., compound tincture of lavender 5 fluid drs., potassium carbonate 87½ grs., distilled water a sufficiency to produce one pint. It contains 1 per cent. of arsenic acid. A reddish liquid of the odour of lavender and alkaline taste. Dose—2 to 8 ms.

Liquor Ammonii Arsenitis.—Prepared like liquor potassæ arsenitis, by adding ammonium carbonate instead of potassium carbonate. Dose—2 to 6 ms.

Liquor Arsenici Hydrochloricus, B.P.—Hydrochloric solution of arsenic.—Prepared by the action of hydrochloric acid on arsenious acid (1 in 110). Colourless liquid. Dose—2 to 8 ms. Pilula arsenicalis Co. Acidi arseniosi $\frac{1}{30}$ gr., quiniæ bisulphatis 1 gr., ferri hypophosphites 2 grs., strychninæ sulphatis $\frac{1}{30}$ gr., saccharine $\frac{1}{100}$ gr. Mix. Pill 1 with or after food. In cachexia, nervous exhaustion.

Pilula ferri arsenicalis, gelatine-coated.—Contains arsenic $\frac{1}{60}$ gr., dried sulphate of iron 3 grs., and syrup ½ gr. Dose—3 grs. In chlorosis and anæmia.

Pulvis Arsenici Escharoticus—arsenical powder. Arsenious anhydride 1, mercuric sulphide (cinnabar) 5, animal charcoal 1. Used as a caustic. Granula Dioscoridis.—Contains arsenious anhydride, milk sugar and manna. Dose—1 to 5. Pilula Asiatica—Arsenious anhydride $\frac{1}{13}$ gr., black pepper $\frac{2}{4}$ gr., acacia 2 grs. for one pill. Levico water.—A chalybeate and arsenical water. Levico, strong.—Arsenious anhydride $\frac{1}{13}$ gr., iron salts 30 grs., and water 20 ozs. Levico, mild.—Arsenious anhydride $\frac{1}{120}$ gr., iron salts 8 grs. Dose—4 drs. Pasta Arsenicalis.—Arsenical paste, arsenicus anhydride 30, plaster of Paris 15, morphine sulphate 20, cocaine 5, eosine ½. Mix. Then add oil of cloves 5, phenol 25. Arsenical cigarettes contain sodii arsenas as a chief ingredient. Used for asthma. Somal Bhasma—arsenic ash. Sublime and purify the commercial arsenious acid. Somal-nu-ghee—Arsenic butter, a native preparation. Soak the roots of akda and kaner in milk till it forms a paste, then add arsenious acid and churn. Separate the butter and clarify.

Physiological action.—In small doses stomachic, general and nervine tonic, alterative and antiperiodic. It aids digestion and improves the appetite. It is a cardiac, respiratory, intestinal and sexual stimulant. As a nervine tonic it exalts the mind, improves the complexion, changes the rough skin to fair. When taken internally, it is slowly absorbed into the blood and is eliminated by the skin and the urine. Under its use there is tolerance for great exertion without fatigue as in ascending high steep hills without any difficulty of respiration. If long continued, it acts as an irritant, gives rise to itching of the eyelids, salivation, irritability of the stomach and intestines, feeble and irritable heart and laborious breathing. There is jaundice, albuminuria and various skin disorders as herpes, urticaria, &c. In very large or toxic doses it is a powerful irritant poison, causing burning in the throat, vomiting, bloody stools, bloody and albuminous urine with strangury or suppression of urine. The symptoms often simulate those of cholera with profound coma, insensibility and paralysis. Long continued exposure to its influence, as in the case of workmen who use Paris green (cupri aceto arsenic) or of those who have to work in arsenical articles or constantly inhale arsenic from wall papers, &c., it gives rise to symptoms of chronic arsenic poisoning. These are colicky pains, the stools become dysenteric, with burning in the eyes, irritation in the nose, silvery tongue and great prostration ; often times it leads to shooting pains in the limbs, paralysis of the extensors of the hand and feet, and muscular atrophy.

Therapeutics.—In medicinal doses it is extensively used as a tonic and astringent in intestinal disorders, as dyspepsia, gastralgia, pyrosis, gastric ulcer or gastric cancer, and chronic alcoholic vomiting. As an antiperiodic it is of benefit in intermittent fevers, ague, neuralgia, spasmodic affections as hemicrania, tic doloureux, epilepsy, chorea, whooping cough, &c. As an alterative it acts on the tissue changes and is very valuable in malarial cachexia, in convalescence from acute fevers, in various chronic skin affections such as lepra, psoriasis, eczema, prurigo, &c. In epithelioma and uterine carcinoma their progress can be retarded by its long and continued use. In chronic rheumatism, chronic catarrhal affections, persistent coryza accompanied with sneezing, in asthma, in old and emphysematous people, in chronic bronchitis with profuse expectoration, in the commencement of phthisis and in diabetes it is extensively used, hence some anti-asthmatic cigarettes contain traces of arsenic. Liquor arsenicalis is very valuable in chorea, diabetes, asthma in children and old and emphysematous people. It has been hypodermically injected parenchymatously in goitre, also in sarco-

matous growths. Cacodylate of sodium—an arsenical preparation—is recommended in tuberculosis, cancer, chronic skin diseases, malarial cachexia, phthisis, &c. Habitual use of arsenic induces a sort of tolerance of the drug, and large quantities can be borne with impunity. It should be given after meals. The natives use medicinal arsenic oil (somal-nu ghee) in $\frac{1}{8}$ m. doses as a nervine tonic in seminal weakness. It is generally given alternately with phosphorus. Locally, they apply arsenic on piles to promote ulceration and also to remove warts, cancers, &c. A paste of arsenic is used as a depilatory and also as an escharotic in cancers, but it is a very painful application. Care should be taken not to apply it to the healthy tissues, lest dangerous absorption may occur.

Arsenii Bromidum—Oxybromide of arsenic.—To a mixture of bromine 1 and carbon disulphide 2 add arsenic sufficient to decolorize the liquid. Shake, filter and evaporate. Deliquescent, colourless prisms ; of a strong arsenic odour, soluble in water. Contains 1 per cent. of arsenious acid. Dose—$\frac{1}{60}$ to $\frac{1}{15}$ of a grain.

Liquor Arsenici Bromatus.—Liquor Arsenii Bromidi, Liquor Potassii Arsenitis et Bromidi. Clement's solution of arsenite of bromine, 1 per cent. of arsenious acid.

Boil, a mixture of arsenious anhydride 1, potassium carbonate 1, bromine 2, in water.

A colourless solution. Dose—1 to 5 ms.

Actions and uses.—Liquor arsenici bromatus is a nervine sedative, given in epilepsy and in diabetes of hepatic origin.

Cupri Arsenis.—Cupric arsenite, copper arsenite, pure Scheele's green, mineral green, Paris green. Mix together solutions of cupric sulphate and of arsenious acid in the presence of an alkali. A pale apple-green amorphous powder. Dose—$\frac{1}{100}$ to $\frac{1}{25}$ of a grain.

Actions and uses.—Astringent and stimulant ; given in extremely small doses ($\frac{1}{5000}$ of a grain) in various intestinal diseases as summer diarrhœa, dysentery, typhoid fever, cholera with slimy and bloody stools, every ten minutes for 5 or 6 doses, then hourly. For chlorosis and anæmia $\frac{1}{60}$ of a grain three times a day. Also used as an insect poison.

Liquor Arsenii et Hydrargyri Iodidi, B.P.—Solution of mercuric and arsenious iodide. Donovan's solution.—Triturate together arsenious iodide, and red iodide of mercury (1), and dissolve in water (100). A pale yellow liquid, having no odour, but a styptic

metallic taste. 110 ms. contain 1 grain of arsenious iodide and 1 grain of mercuric iodide. Dose—5 to 20 ms.

Pilula arsenii et hydrargyri iodidi contains $\frac{1}{12}$ gr. of each. Dose—1 or 2 pills.

Actions and uses.—A very valuable alterative, combining the action of arsenic, mercury and iodine. Given in obstinate skin affections and syphilis.

Arsenii Iodidum, B.P.—Arsenious Iodide.—Mix together arsenium and iodine. Another mode.—Mix together arsenious and hydro-iodic acids, and evaporate. Small, orange-red crystals or masses, of an iodine odour and of a styptic taste, soluble in water (1 in 7), in alcohol (1 in 30), also in ether. It decomposes by boiling water or by boiling alcohol, and volatilize by heat. Dose—$\frac{1}{20}$ to $\frac{1}{5}$ of a grain.

Actions and uses.—Nervine tonic and alterative, combining the actions of arsenic and iodine, but more of arsenic than of iodine. Given in syphilis, scrofula, &c.

Arsenii Oleas, Oleatum Arsenici.—An ointment containing 20 grs. of oleate of arsenic to one ounce of lard, is used as caustics in the treatment of ulcerating and tubercular varieties of lupus, ulcerating epithelioma and condyloma.

Arsenii Bisulphidum.—Bisulphide of arsenic, realgar, red sulphuret of arsenic.

Vernacular.—Arab.—*Zurneik Surkh;* Eng.—*Red Orpiment;* Guz.—*Mansil;* Hind.—*Lâl Haratal, Lal Sambul, Mansil;* Malay.—*Warangan;* Pers.—*Zaranik Surkh;* Sans.—*Manahsila;* Tam.—*Kudire-pal-pasphanam.*

Heat arsenious acid with sulphur or triturate native sulphide (manasila) in the juice of lime, agathya and fresh ginger. Evaporate and add the paste of turmeric powder. Heavy mass or powder of a yellowish red colour. It has an acid taste and smell, and burns with a blue flame. Dose—$\frac{1}{30}$ to $\frac{1}{10}$ gr.

Actions and uses.—Alterative, antispasmodic and tonic. In native practice it is given in fevers, cough and asthma. In skin diseases it is given both internally and applied externally. Locally it is applied to fistulous sores with benefit.

Tersulphide, with Teroxide of Arsenic.—Bomb.—*Dagadi Haratal;* Guz.—*Dagadi Haratal.* Shining, crystalline, irregular pieces of gray or red colour. Rarely used in medicine.

Arsenii Trisulphidum.—Tersulphide of arsenic, yellow orpiment.

Habitat.—Found native in China and Persia.

Vernacular : Eng.—*Orpiment, Yellow Sulphuret of Arsenic ;* Arab.—*Ursanigun ;* Beng.—*Haritał ;* Burm.—*Hsaydan-Shwaywa ;* Cing.—*Aridala ;* Chin.—*Pi-hwang ;* Duk.—*Hartala ;* Eng.—*Yellow Sulphide of Arsenic ;* Guz.—*Aratal ;* Hind.—*Hartal ;* Malay.—*Warangan ;* Mar.—*Haritala ;* Pers.—*Zarneik-zard, Zarni, Zarna ;* Sans.—*Haritalaka ;* Tam.—*Arridaram, Yellikud-pashanam ;* Tel.—*Daddipashanam.*

Fuse arsenic with sulphur in appropriate proportions. It is also prepared by the action of sulphuretted hydrogen or hydrosulphurets in a solution of arsenious acid. Massive or lamellar golden yellow crystalline pieces, inodourous, and insoluble in water. Dose—$\frac{1}{30}$ to $\frac{1}{8}$ of a gr.

Preparation.—Hartal oil and hartal javara (ashes). To prepare it, triturate haratal in the juice of satoda and then apply heat. Dose—$\frac{1}{8}$ to $\frac{1}{4}$ gr.

Actions and uses.—Alterative and nervine tonic. It forms an ingredient in some depilatory powders. The natives use it internally under the belief that it increases strength, beautifies the skin and prolongs life.

Remarks.—Two varieties are met with—Hartal-i-vilâyeti and Hartal-jwarki, the latter having beautiful lamellar structure ; also called Hartal pilli (yellow) and Hartal golabi (rose-coloured).

Godanti Haratal.—It is known as *safed haratal*, but has no relation with arsenic salt. Godanti hartal is the sulphate of lime or gypsum (Gabhana).

Cacodylates.—Organic compounds of arsenic.

Cacodylic Acid.—Dimethyl arsenic Acid. A white crystalline powder, highly deliquescent. Sodium Cacodylate.—The salt produced by a combination of sodium and cacodylic acid. It contains 54 per cent. of cacodylic acid. Dose—$\frac{1}{2}$ to 1 gr. Used as hypodermic injection. Dose—$\frac{1}{6}$ gr. As rectal injection 1 gr. in 4 drs. of water.

Actions and uses.—Same as those of arsenious acid or liquor potassii arsenitis. Used as a cure for phthisis. Under its use the softening of the tubercles is greatly improved. Very useful in chronic malarial fevers.

Antimonium—Antimony.—Rarely met with in nature in a free state, but generally as oxide, or native black tersulphide and oxysulphide. To obtain it, roast antimony sulphide into antimony oxide, and then reduce it to the metallic state with charcoal. Brittle bluish white metal of metallic lustre and crystalline structure. It is not officinal.

Antimonium Nigrum Purificatum, B.P.—Antimonious sulphide—Purified black antimony.—Fuse native sulphide of antimony, remove silicious matter and macerate the residue with ammonia water. Grayish-black crystalline powder, without any odour and taste, insoluble in water and alcohol, but soluble in hydrochloric acid.

Preparations.—Antimonium sulphuratum and antimonii terchloridum.

Antimonii Chloridum—Antimony chloride—Antimony trichloride—Butter of antimony.—Dissolve purified black antimony in hydrochloric acid and apply heat. Evaporate and crystallize. Colourless crystals. On addition of water it decomposes into hydrochloric acid and basic antimony oxychloride or Algaroth powder.

Liquor Antimonii Chloridi—Solution of chloride of antimony. —Dissolve chloride of antimony in hydrochloric acid. A heavy liquid of a yellow colour. Sp. Gr. 1-47.

Actions and uses.—Caustic and escharotic; it does not cause much pain. Applied to cancer, to poisoned wounds and to bites from snakes, &c.

Antimonii Oxidum, B.P.—Antimonious oxide. Decompose antimonious chloride with water and then treat with sodium carbonate; oxide of antimony and chloride of sodium are formed. Wash and dry the precipitate. A greyish-white powder, without odour or taste, nearly insoluble in water and insoluble in alcohol. Readily dissolved in hydrochloric or tartaric acid. Dose—1 to 2 grs.

Preparation.—Pulvis Antimonialis—Antimonial powder, B.P.—A substitute for James' powder (it contains oxide of antimony 1in calcium phosphate 2). Dose—3 to 6 grs.

Actions and uses.—Laxative, expectorant, diaphoretic and emetic, like tartarated antimony, being less irritating but less active. Given in fevers and inflammatory diseases, catarrhal affections and chronic skin diseases.

Antimonium Sulphuratum, B.P.—Sulphurated antimony, Kermes mineral—a mixture of antimony sulphides with oxides and sulphur.

Habitat.—China, Cornwall, Saxony, Borneo, Vizianagram.

Vernacular.—Eng.—*Kermes Mineral*; Arab.—*Ismad, Kohal;* Beng. —*Surma;* Burm.—*Tay-lak-youk;* Can.—*Anjena;* Duk.—*Anjan, Surma;* Guz.—*Surmo, Kuhl-anjan;* Hind.—*Anjan, Surmé-ka-pathar;* Malay.—*Kinang;* Pers.—*Surmah;* Sans.—*Anjanam, Sauvira;* Tam. —*Anjanamai;* Tel.—*Nilanjanam, Katuka.*

Manufacture.—Boil together antimonious sulphide and sublimed sulphur in a solution of caustic soda and strain, then add diluted sulphuric acid, wash and dry the precipitate. An orange or dull red powder, without odour, and of a slight metallic taste; insoluble in water, readily dissolved by caustic potash or sodium hydroxide, also by hot hydrochloric acid when hydrogen sulphide is evolved and sulphur separated. Dose—1 to 2 grs. It is an ingredient in the preparation of Plummer's pills.—Pilula hydrargyri subchloridi composita, containing sulphurated antimony 1 oz., mercurous chloride 1 oz., guaiacum resin 2 ozs., castor oil 180 grs., alcohol 1 dr. Dose —4 to 8 grs.

Actions and uses.—Alterative, diaphoretic and emetic; used in secondary syphilis, chronic cutaneous eruptions, glandular swellings, and also in chronic rheumatism. Native hakims apply it to the eyelids and eyebrows.

Antimonium Tartaratum, B.P.—Syn.—Antimonii et potassii tartras, tartar emetic, antimony and potassium tartarate. Mix together antimonious oxide and a solution of acid potassium tartrate; evaporate and crystallize.—Colourless, transparent small crystals or granular powder of sweet, slightly disagreeable metallic taste and without odour, soluble in cold water (1 in 17), in boiling water (1 in 3), almost insoluble in alcohol. Dose—As a diaphoretic $\frac{1}{24}$ to $\frac{1}{8}$ of a grain; as an emetic 1 to 2 grs. As a depressant $\frac{1}{16}$ to 1 gr.

Preparations.—Vinum Antimoniale, B.P.—Syn.—Antimonial wine (2 grains to a fluid ounce of sherry). Dose—10 to 30 ms. An ingredient in the preparation of mistura glycyrrhizæ composita. Unguentum Antimonii Tartarati—Tartar emetic ointment 1 in 5. Syrupus scillæ compositus. Dose—5 to 60 ms. Contains 1 gr. of tartar emetic to 1 oz., with squill, senega, &c.

Physiological action.—Antiphlogistic, diaphoretic, expectorant, emetic, general cardiac and vascular depressant. In small doses it stimulates the mucous membranes, the bronchial and salivary

glands, the liver, stomach, pancreas and intestines. In large doses it is an irritant poison, causing nausea, vomiting, rice-coloured stools simulating cholera, prostration, cyanosis, delirium, coma, motor and sensory paralysis, collapse and death. When swallowed, it constringes the throat and the fauces, causing aphthous sores and difficult deglutition. It is a protoplasmic poison. It lessens oxygenation of blood, lowers the blood pressure, and reduces the body temperature. Owing to its irritant action it causes inflammation of the skin follicles, leading to papular, vesicular and finally pustular eruptions, the pustules resembling those of small-pox.

Therapeutics.—As an antiphlogistic it is given in doses of $\frac{1}{60}$ to $\frac{1}{40}$ gr. in febrile and inflammatory affections, in acute œdema of the lungs, in broncho-pneumonia, meningitis, laryngitis, tonsillitis, croup and whooping cough ; also in hepatitis, acute rheumatism, &c. It produces copious perspiration and lowers the pulse. It is an effectual remedy in evacuating the stomach when in an overloaded state. In puerperal peritonitis and in orchitis it is a valuable remedy. In small and oft-repeated doses it has a tendency to produce relaxation of muscular system and the respiratory mucous membrane, and hence given in infantile catarrh following cold or moisture. Owing to its action on the muscular system and before the discovery of chloroform it was used in the reduction of dislocation, and of hernia, and for the relaxation of rigid os during delivery. Externally the ointment acts as a counter-irritant, causing pustular eruptions, and is used over diseased joints, in head affections as acute meningitis, over the chest in chronic bronchitis, asthma, phthisis, and the spine in paralysis.

Stannum—Tin.

Vernacular.—Arab.—*Kasdin, Rassas, Abrus ;* Beng.—*Bang Banga ;* Burm.—*Khai-ma-phyn ;* Chin.—*Yangdech ;* Cing.—*Sudu-iyam ;* Duk.—*Katthil ;* Guz.—*Kalai ;* Hind.—*Kathai, Kathal, Ranga ;* Mar.—*Kaloi ;* Malay.—*Timah, Kalang ;* Pers.—*Ursis ;* Sans.—*Ranga, Trapu ;* Tam.—*Tagaram ;* Tel.—*Vendi Sisam ;* Maleal.—*Falagh.*

Rarely met with in a free state, found as oxide as native plates, or tin stone or in combination with sulphur as sulphide.

To obtain it, heat tin stone with charcoal. A bluish white metal of silver-like appearance, sparingly ductile.

Preparation.—Banga bhashm or tin ashes, Vangashwer Rasa.

Bang Bhasm.—Melt tin foils over a fire in a crucible containing a compound powder of Aghada bija, Amali, Ajamoda and Silajita

till the whole is converted into ashes. When cool add Haratala in quantity equal to that of the ashes. Triturate the whole in the juice of lime. Roast the paste and calcine. Dose—2 to 6 grs.

Vangashwer Rasa.—A compound powder, containing tin bhasma 2 ; Para kajali, 2 ; silver leaves, Rupa varakha, 2 ; gold leaves, sona varakha, ½ ; mica, 2 ; Bhima Seni kapura, 2 ; Pearls, ½. Mix and make a powder. Dose—2 to 6 grs.

It is a very popular medicine with vayids. They regard it as aphrodisiac, alterative, tonic, and vermifuge. The compound powder is used as a diuretic, chiefly in urinary disorders and painful micturition. In diabetes it is given in combination with Tendi-mula and other alteratives and tonics ; and as a vermifuge in tape worms. In gonorrhœa and asthma it is highly recommended. As a powerful aphrodisiac it is given with other nervine tonics, in seminal debility, and is also given in epilepsy, chorea, &c.

AURUM—GOLD.

Met with in a metallic state in combination with other metals. Sometimes as sulphide.

Vernacular.—Arab.—*Zahab ;* Guz.—*Sonum ;* Hind.—*Sona ;* Mah.—*Sona ;* Malay.—*Amas, Kanchana ;* Sans.—*Suvarnam ;* Beng.—*Sonar ;* Burm.—*Shue-Saku ;* Can.—*Bengarad ;* Cing.—*Ran-ta-hadu ;* Duk.—*Suneri-tagat ;* Maleal.—*Tongarekha ;* Pers.—*Zar ;* Tam.—*Ponnoo ;* Tel.—*Bangarroo.*

Gold has a metallic lustre and reddish yellow colour. It is very ductile and softer than silver, soluble only in nitro-muriatic acid.

Used as gold leaf. To prepare it, beat gold into extremely thin leaves. Dose—$\frac{1}{30}$ to $\frac{1}{12}$ of a grain.

Powdered gold—Triturate gold leaf with sugar of milk (1 in 10) or with potassium sulphate. Dose—$\frac{1}{6}$ to $\frac{1}{8}$ gr.

Gold Bhasm.—*Vernacular*—Guz.—*Sonani Khak, Sonani-matra ;* Hind.—*Guldast.* Dose—$\frac{1}{10}$ to ¼ of a grain. Prepared by the usual process, used for the preparation of mineral ashes. Make a paste of parakajali and sublimed sulphur, equal parts, with the juice of kanchana chhala, to this add gold leaf and roast it on fire. Dose—$\frac{1}{10}$ to ¼ gr.

Preparation.—Compound pill known as Suvarna Vasant Malti. Mix gold leaf 1, pearl 2, hingalo 3, kal khaparo 8. Triturate in lime-juice and make a pill mass. Dose—¼ to 1 gr. Used in impotence.

Physiological action.—Gold and its salts are alterative, resolvent nervine tonic, emmenagogue and aphrodisiac. In small and medicinal doses it stimulates the activity of the stomach and of the secreting organs as the skin and kidneys, causing diaphoresis and diuresis. It also excites menstrual flow in women and sexual appetite in men. In large doses it is an irritant poison, setting up gastro-enteritis with convulsions, cramps, insensibility and great restlessness. *Therapeutics.*—Given in nervous dyspepsia and amenorrhœa, in chronic metritis with scanty menstruation, in sterility and in habitual abortion. As an alterative it is given in chronic Bright's disease, in syphilis where mercury and iodide of potassium have failed, and in strumous affections as scrofula. It is also given in vertigo, migraine, habitual inebriety, chorea, hysteria, suicidal mania, hypochondriasis, &c., or like phosphorus to increase mental vigour. In ascites, ovarian dropsy, in nervous dyspepsia with pain in the stomach after food, in duodenal catarrh, jaundice, salts of gold are given with advantage. The natives generally administer gold leaf with betel leaf and other aphrodisiacs; sometimes gold ash is given in the juice of Bhangaro to stimulate virile powers. Suvarna Vasanta Malti is given in impotence. Externally the salts of gold are applied either in solution or in substance. They cause local irritation and even act as an escharotic. They are useful applications in fistula, hæmorrhoids, warts, putrid ulcers and fœtid sores.

Auri Bromidum—Auric Bromide—Bromide of Gold. A dark brown non-deliquescent powder, or a friable yellow grey mass, soluble in water and in ether. Dose—$\frac{1}{60}$ to $\frac{1}{10}$ gr. increased to $\frac{1}{3}$ gr.

Actions and uses.—Auri bromidum is sedative, anti-epileptic, better borne than other bromides, given in epilepsy, migraine and other nervous affections as hysteria; also in amenorrhœa and chronic Bright's disease.

Liquor Auri et Hydrargyri Bromidi—Contains auric bromide 1½ gr., mercuric bromide 1½ gr., aqua 1 oz. Dose—5 to 10 ms.

Liquor Auri et Arsenii Bromidi—Contains auric bromide 1½ gr., oxybromide of arsenic 3 grs. to 1 oz. of water. Dose—5 to 10 ms.

Used hypodermically or in solution.

Physiological action.—Alterative, acting upon the glandular system. It improves the quality of blood by increasing the amount of hæmoglobin and the number of red corpuscles. *Therapeutics.*—Given in epilepsy, diabetes, sclerosis of the liver and lungs, in

senile and atheromatous degenerations, and in neurotic diseases. In fibroid phthisis, in locomotor ataxia and in syphilis it is said to be particularly serviceable.

Auri, Arsenii et Hydrargyri Bromidi—Gold, arsenic and mercury bromide, also known as mercauro. Mix together bromide of gold, bromide of arsenic and bromide of mercury. Used as liquor auri, arseni et hydrargyri bromidi. Contains $\frac{1}{3\frac{1}{2}}$ of each salt in 10 ms. Dose—5 to 10 ms.

Actions and uses.—Tonic given in anæmia, as an alterative and antisyphilitic in syphilis.

Aurii et Potassii Bromidum.—A fine powder, readily soluble in water. Dose—$\frac{1}{6}$ to $\frac{2}{3}$ gr.

Used hypodermically or in pills. As an anti-epileptic it is given in hysteria, epilepsy, &c.

Auri Chloridi—Gold chloride—Perchloride of gold. Terchloride of gold.—Add gold to nitrohydrochloric acid. Evaporate. Deliquescent, crystalline masses or needle-shaped prisms, of a brown colour; soluble in water, alcohol and ether. Dose—$\frac{1}{60}$ to $\frac{1}{30}$ of a grain. Used as pill or solution.

Actions and uses.—Anti-tubercular and alterative. Given in tubercular diseases, phthisis, &c.

Auric Cyanide—Gold Tricyanide—Hygroscopic plates, colourless; soluble in water, alcohol. Dose—$\frac{1}{30}$ to $\frac{1}{12}$ a grain.

Aurous Cyanide—Gold Monocyanide. Crystalline powder, of a yellow colour. Insoluble in water, alcohol or ether. $\frac{1}{16}$ to $\frac{1}{4}$ of a grain.

Actions and uses.—Both are anti-tubercular, given in tuberculosis.

Aurous Iodide.—Greenish powder, soluble in acids. Dose—$\frac{1}{60}$ to $\frac{1}{12}$ of a grain hypodermically.

Actions and uses.—Alterative; given in scrofula, tuberculosis, &c.

Auri et sodii Chloridum—Gold and sodium chloride. Dissolve gold leaf in hydrochloric and nitric acids and add solution of sodium chloride. It contains 50 per cent. of pure gold. Slightly deliquescent orange, yellow powder without any odour and of a metallic taste, soluble in water (1 in 2), partially so in alcohol. Its solution is decomposed by exposure to light. Dose—$\frac{1}{3\frac{1}{2}}$ to $\frac{1}{12}$ grain.

Actions and uses.—Alterative, resolvent and nervine tonic given in hysteria, and in syphilis when mercury or iodide of potassium have failed. It averts tendency to habitual abortion. Excellent results

follow its use in nervous depressions as in melancholia, hypochondriasis, &c. Locally, it causes irritation and acts as an escharotic. Hypodermic injection of its solution with potassium cyanide in $\frac{1}{1000}$ gr. to $\frac{1}{100}$ grain each is useful in lupus.

Rubidium.—The salts of this metal resemble those of ammonium, potassium and sodium in therapeutic actions, but are more powerful as anti-epileptics.

Rubidii Bromidum.—Octohedron crystals, soluble in water (1 in 1), of a saline taste. Dose—5 to 30 grs. Used as sedative in epilepsy.

Rubidii Ammonii Bromidum.—Rubidium ammonium bromide.—White or yellowish white powder or granular crystals; readily soluble in water. Dose—90 grains daily. Sedative, hypnotic and anti-epileptic like ammonium bromide, but more powerful. Given in epilepsy.

Rubidii Iodidum.—Colourless cubic crystals, odourless, and of a bitter saltish taste, soluble in water (1 in less than 1). Dose —5 to 20 grs.

Physiological action.—Alterative, tolerated better than potassium iodide, being less irritant and less depressant of the heart; it does not derange digestion. *Therapeutic uses.*—Given in syphilitic rheumatism. As eye drops (5 p. c.) it is valuable in chronic parenchymatous inflammation of the eye.

Osmium.—Obtained from osmiridium and platinum residues. A black powder. When in a finely divided state, it is highly combustible.

Acidum Osmicum—Osmic acid—Perosmic acid—Hyperosmic acid—Osmium tetroxide. Heat osmium in a current of oxygen gas. Yellow needlelike crystals, softening like wax. The vapour is highly irritating and pungent to the eyes and nose, causing inflammation of the conjunctiva. The taste acrid and burning. Soluble in water (1 in 50), but decomposing when in contact with alcohol and ether.

Preparation.—Liquor acidi osmici (1 per cent.) Dose—2 to 10 ms. Potassium osmate, a dark red crystalline powder soluble in water. Dose—$\frac{1}{64}$ of a grain.

Actions and uses.—Anti-neuralgic, discutient and anti-epileptic. The solution of osmic acid or of potassium osmate is used hypodermically

for muscular rheumatism, sciatica, peripheral neuralgia, goitre, and strumous glands. As a discutient it is applied externally to tumours. Potassium osmate is given in epilepsy, also in neuralgia and goitre along with or alternating with bromide of potassium.

Tellurium.—A brittle metal found associated with gold, silver, lead and bismuth.

Habitat.—Hungary.

Extracted from the bismuth-sulphotelluride ore. Fuse the ore with sodium carbonate made into paste with oil. Sodium telluride and sodium sulphide are produced and metallic bismuth is set free. Dissolve the whole in water and expose the filtrate to air. Sodium and sulphur oxidise and form sodium hydrate, and thiosulphate and tellurium are set free. Tellurium when slowly cooled forms two oxides—tellurous and telluric acids. With alkaline metal it forms alkaline tellurates.

Potassii Telluras. Potassium Tellurate.—Dissolve telluric acid and potassium carbonate in hot water. A fine powder, soluble in water. Dose—$\frac{1}{3}$ gr. pill. Used as a remedy for night sweats in phthisis.

Plumbum, B.P.—Lead.—It never occurs free in nature, but is met generally as sulphide (galena) rarely as oxide (minium) or as carbonate (white lead).

Vernacular.—Arab.—*Ressas, Anuk;* Beng.—*Sisa ;* Bomb.—*Sisun ;* Burm.—*Khai-pok ;* Chin—*Hek-Yusen ; Heh-teh ;* Can.—*Shisa ;* Guz.—*Kalun Sishu ;* Hind.—*Sisa ;* Mah.—*Shish ;* Malyal.—*Tismah-itam ;* Pers.— *Anuk, Surb ;* Sans.— *Naga, Sisaka ;* Tam.—*Iyam, Elum ;* Tel.—*Sheshamu.*

Roast native sulphide (galena) or heat native sulphide with iron. The natives prepare it by melting the sulphide in a crucible, then dropping the melted liquid through a hole into a vessel containing decoction of triphala or in the milky juice of akada ; when cool, it is said to be purified lead. Bluish gray, soft, flexible metal very malleable and slightly tenacious, freely soluble in nitric acid.

Sisa bhashma or Naga bhashma—Lead ash. Reduce lead and calcine it with mansil (sulphide of arsenic). Then add the juice of nagarvel and rub into a fine powder. Dose—$\frac{1}{2}$ to 2 grs.

Physiological action.—Metallic lead is inert. Taken into the stomach it is converted into a soluble salt by the action of the acid gastric secretions. Absorbed into the blood, lead is converted into an albuminate. It is slowly excreted and found in the urine, sweat,

bile and milk. *Therapeutics.*—Sisan bhashma is astringent. Used by the natives in cough with profuse expectoration, also in night sweats. It is given with benefit in chronic diarrhœa and other chronic discharges as leucorrhœa, gonorrhœa and excessive suppuration also in ulceration of the stomach in menorrhagia and other internal hæmorrhages as hæmoptysis, hæmatemesis, &c. As an astringent it is given in colliquative sweats, sometimes to check excessive sputum as in bronchorrhœa, chronic bronchitis, whooping cough and phthisis; also employed with benefit in aneurism of the aorta, hypertrophy of the heart and in epilepsy. In caseous pneumonia it is given with digitalis and opium. Externally as a sedative and astringent an ointment is used for excoriations, contusions, sprains, skin diseases accompanied with irritation, &c.; as a suppository it is used in hæmorrhage from the rectum as well to soothe the irritation of piles.

Plumbi Acetas, B.P.—Syn.—Lead Acetate. Saccharum Saturni.

Vernacular.—Eng.—*Sugar of Lead;* Burm.—*Yuen Shivang.*

To prepare it, dissolve lead oxide or lead carbonate in acetic acid and evaporate, or act upon lead sheets with the fumes of vinegar. Slightly efflorescent white spongy masses or colourless shining prisms or plates, of an acetous odour and a sweet astringent metallic taste. Soluble in cold water (1 in 2·3), boiling water (1 in 0·5), in cold alcohol, (1 in 30) and in boiling alcohol (1 in 1). Dose—1 to 5 grs.

Preparations.—Pilula Plumbi cum Opio, B.P. (4 grs. contain about 3 grs. of lead acetate and ½ gr. of powdered opium.) Dose—2 to 4 grs. Suppositoria Plumbi Composita, B.P. (3 grs. of the lead acetate and 1 gr. of opium in each). Unguentum Plumbi Acetatis, B.P. (1 in 25).

Physiological action.—In large doses it is emetic, also gastro-intestinal irritant. It gives rise to extreme nervous depression leading to paralysis of the extensors of the fore-arms known as drop-wrist. In extreme cases it leads to mental failure, coma, and collapse. In small doses it and other lead salts are astringent. They lessen the secretions, depress motor contractile power, impair the cardiac and respiratory functional activity and destroy the red corpuscles in the blood, producing anæmia and great wasting. In the intestines they are converted into sulphides and excreted as such. If taken for a long time, they give rise to symptoms of chronic lead-poisoning known as plumbism. These symptoms are found in those who drink water impregnated with lead by being conveyed through lead pipes, or who

work for a very long time in the smelting of lead ores, or as painters, or in the preparation of hair dye, &c. The principal symptoms are loss of appetite, emaciation, pallor of the face, constipation or watery motions, feeble heart, a species of colic known as lead or painter's colic, a peculiar blue line on the gums or bluish blotches on the mucous membrane of the mouth and tongue and albuminuria. Occasionally there may be aphonia, vertigo, headache, stupor and convulsions. Abortion occurs and may be due to its toxic effect on the fœtus or to the violent contraction of the uterine muscles. *Therapeutics.*—Acetate of lead is a sedative astringent and hæmostatic. As a stypic it is used combined with opium in diarrhœa and in later stages of dysentery with ulcerations.

Liquor Plumbi Subacetatis Fortis, B.P.—Strong solution of lead subacetate—Goulard's extract.

Boil together acetate of lead 5 ounces, oxide of lead 3½ ounces, in distilled water to make 20 fluid ounces, or to bring it to the specific gravity of 1·275. A clear colourless liquid of a sweet astringent taste and without any odour, and of an alkaline reaction. It contains 24 per cent. of subacetate of lead. Precipitates on the addition of acacia.

Preparation.—Glycerinum Plumbi Subacetatis, B.P.—Same strength as the Goulard's extract, with glycerin in place of water. Sp. gr. 1·48.

Liquor Plumbi Subacetatis Dilutus, B.P.—Syn.—Diluted solution of subacetate of lead. Goulard's lotion or Goulard water (1 of the strong solution in 80).

Unguentum Glycerini Plumbi Subacetatis, B.P. (1 of glycerin of subacetate of lead to paraffin ointment, white, 5).

Ceratum Plumbi Subacetatis.—Goulard's cerate, cerate of lead subacetate, 1 to 4 of camphor cerate.

Plumbi Stearas.—A white powder containing subacetate of lead, curd soap, kaolin and starch.

Actions and uses.—The solution is local astringent and sedative, extensively used in skin diseases, as eczema, impetigo, lichen, erythema, also in muco-purulent discharge from the ear, urethra or vagina. As a sedative it is used in the form of injection in gonorrhœa and leucorrhœa and as a lotion to all swollen and inflamed parts. Plumbi Stearas is used as a dusting powder in eczema, diluted with kaolin or starch.

Plumbi Carbonas, B. P.—Lead hydroxy-carbonate, lead carbonate.

Vernacular.—Eng.—*White Lead, Flake White Lead;* Arab.—*Isfédâj;* Beng.—*Sophêda;* Bar.—*Khema-phin;* Chin.—*Peh-feu, Fen-sih;* Can.—*Sisa Bhasma;* Duk.—*Sufêdah;* Guz.—*Sapeto, Safeda;* Hind.—*Safeda;* Mar.—*Sapeta;* Malyal.—*Timaputih;* Pers.—*Isfedab;* Sans.—*Nag Bhasma;* Tam.—*Velliyya;* Tel.—*Shish;* Malay.—*Timaputih.*

Suspend sheets of lead over the vapours of heated vinegar and of carbonic acid gas. Another mode.—Obtained by a double decomposition of lead nitrate with sodium carbonate. A soft heavy white opaque powder without any odour or taste. Insoluble in water and alcohol, soluble with effervescence in dilute acetic acid.

Used as unguentum plumbi carbonatis, B.P., ointment of lead carbonate. Carbonate of lead 1 and paraffin ointment, white, 9.

Actions and uses.—Local, sedative and astringent like other salts of lead, only used externally to protect irritated surfaces as in erysipelas, intertrigo, &c.; the ointment is used over the unbroken skin in swollen and inflamed parts and excoriations.

Remarks.—*Sapeti* should not be confounded with *safeda* or *safeto.* What is known as *sapeti,* is not a preparation of lead, but a preparation of hydrargiri oxidum rubrum, which is also known in the bazaar by the name of sipichanda.

Plumbi Iodidum, B.P.—Syn.—Lead iodide—Precipitated lead iodide.—Obtained by decomposing solution of lead acetate or lead nitrate with potassium iodide. Heavy, bright, yellow golden powder without odour or taste, sparingly soluble in cold water (1 in 2,000) and in boiling water 1 in 200. entirely soluble in solution of ammonium chloride. Dose—1 to 4 grs.

Used as unguentum plumbi iodidi, B.P. (1 in 10) with paraffin ointment, yellow. Emplastrum Plumbi Iodidi, B.P. (1 in 10).

Actions and uses.—Resolvent. Externally used as an application to enlarged joints, to tubercular, scrofulous and other enlarged lymphatic glands, to reduce malarial enlarged spleen, to congested os, also to chronic eczema, psoriasis, &c., and to promote the healing of ulcers. It communicates a yellow stain to the skin.

Plumbi Nitras.—Syn.—Lead nitrate—Nitras (Azotas) Plumbicus. Dissolve oxide or carbonate of lead in diluted nitric acid. Colourless, opaque, octohedron crystals, without any odour and of a sweetish astringent metallic taste. Soluble in water (1 in 2), insoluble in alcohol. Dose—$\frac{1}{4}$ to $\frac{1}{2}$ gr. Used as paste, lotion, injection. Ledoyan's disinfecting fluid (1 in 8).

Actions and uses.—Not given internally. Externally, discutient, deodorizer, used to remove or correct the fœtor of offensive discharges from the ear, nose and from gangrenous sores. A lotion (30 grs. to a fluid ounce of water) is used for sore or fissured nipples, for excoriations and cracked hands. The powder is dusted for ulcerated onychia, in epithelioma, &c. An injection (10 grs. to 1 oz.) is given in leucorrhœa and gonorrhœa, also as a deodorizer in ozœna, gangrenous sores, &c.

Plumbi Oxidum, B.P.—Lead oxide.

Vernacular.—Eng.—*Flowers of Lead, Litharge ;* Arab.—*Murdâ Sang ;* Beng.—*Murdar Sing ;* Can.—*Mudadârshingi ;* Duk.—*Murdâ Sing ;* Guz.—*Murdad Sing, Bodara Kakaro, Bodara Patharo ;* Hind.—*Murdar Singh ;* Malyal.—*Mudar Sinka ;* Pers.—*Murda Sang ;* Tam.—*Mudar Shingu ;* Tel.—*Mudar Singy.*

Obtained by the action of heated air on melted lead or by heating lead ores containing silver. Heavy scales of a pale-yellowish red colour. It resembles mica (abraka) very much in appearance. It is without odour or taste. Insoluble in alcohol and nearly so in water. Completely soluble in dilute nitric acid and in acetic acid. Oleatum Plumbi—20 per cent. solution of lead oxide in oleic acid. Emplastrum Plumbi, B. P.—Lead plaster—Litharge plaster—Diachylon plaster (1 in 3). Oxide of lead 1 pound, olive oil, 2 pounds, water 16 ounces. Is white, pliable, and tenacious ; soluble in warm oil of turpentine.

Preparation of lead plaster. Unguentum Diachyli, Hebra's Dyachylon, or lead ointment, contains lead plaster 50, olive oil 49 and oil of lavander flowers 1. It is also contained in emplastrum hydrargyri, emplastrum resinæ, emplastrum saponis. Compound native ointment.—Boil cera flava and add bodar kakro, catechu (katho), khad mati equal parts, allow it to cool and then add sessamum oil (Tila tela) and Borneo camphor (Barasa kapur). Used as plaster.

Actions and uses.—Local astringent and sedative. The plaster is used as a protective to wounds and ulcers. In the form of lotion with rose water or with vinegar it is used to allay irritation in prickly heat, in erysipelatous patches, freckles, &c. The oleate arrests morbid discharges, allays irritation and itching of eczema. It is useful in lichen and in hard indurated papules, in acne of the face and back. In burns, cracks and fissures on palms, and on abraded surfaces the addition of oil of cade (1 to 4) succeeds well. In scabies, sulphur combined with plumbi oleas 8, is an excellent

preparation. With caustic potash it is applied as a caustic to warts of the glans, penis and vagina and to condylomata. The emplastrum prevents bed sores.

Plumbi Oxidum Rubrum—Red oxide of lead.

Vernacular.—Eng.—*Red Lead, Munium;* Arab.—*Isrenj;* Beng.—*Sêndûr;* Burm.—*H'sang;* Chin.—*Yen-tan, Chu-fen;* Can.—*Shindûra;* Duk.—*Sêndûr;* Hind.—*Sendûr, Ingur;* Guz.—*Sindhur;* Malyal.—*Tamarnerd, Galang-gam, Chintûrâm;* Pers.—*Suranj Sang;* Sans.—*Sinduraha, Naga Sambhava;* Tam.—*Saggapu, Sindurana;* Tel.—*Yerra Senduram.*

Obtained by heating massicot to a very high temperature—bright orange-red, granular crystalline powder; on applying more heat it becomes redder than purple and finally black.

Black lead plaster—Kalo Malama.—Sindura, afima, gandhaka, mithun-tela equal parts. Boil the whole over a fire till it becomes black. To this add kapura and wax, stir them uniformly and make an ointment or plaster.

Red lead plaster—Lâla Malama.—Add mithun-tela 20 to sindura 10, and heat till the mass becomes red. To this is gradually added kapura and wax and stirred, when the whole forms a uniform mass.

Actions and uses.—Local stimulant used extensively by the natives to promote maturation of boils and abscesses and the healing processes in all kinds of ulcers and wounds; used also in certain skin diseases as eczema, pustular eruptions, &c.

Cuprum, B.P.—Copper.

Vernacular: Eng.—*Copper;* Arab.—*Nehass;* Burm.—*Kyani;* Chin.—*Chi-tung, Tare-jen-tung.*—Guz.—*Trambun Tamba;* Hind.—*Tama;* Malay.—*Tambaga;* Pers.—*Miss;* Sans.—*Tamra, Tamraka;* Tam.—*Shembu;* Tel.—*Tamberam, Raggi.*

Found extensively free in the mineral kingdom. Also in various combinations as sulphide in copper pryites and copper glance, as carbonate, phosphate, and arseniate; with oxygen, as cuprous or red oxide and as cupric or black oxide. Metallic copper wire and copper foil or turnings are officinal. A brilliant sonorous ductile metal of a red colour. It is a good conductor of heat and electricity. Its chief solvent is nitric acid.

Copper Bhashma.

Vernacular: Guz.—*Tamra bhashma;* Sans.—*Tambra bhashma.*

Rub together mercury ½ and sulphur 2, in the juice of Akado (Calotropis Gigantea), add old copper coins and submit it to processes of oxidation and calcination. Dose—½ to 1 grain.

Actions and uses.—Sedative, alterative. The natives use it in combination with aconite and the juice of stramonium leaves in epilepsy, gout and rheumatism ; also in chronic skin diseases, leprosy, asthma, chronic diarrhœa and gonorrhœa.

Cupri Subacetas. Syn.—Subacetate of copper.

Vernacular : Eng.—*Verdigris, Ærugo ;* Arab.—*Zangura ;* Burm.—*Theng Twa ;* Guz.—*Jangala ;* Hind.—*Pitra ;* Malay.—*Sevan Paibembaga* ; Mar.—*Jangala ;* Pers.—*Zangar ;* Sans.—*Jangalapacha ;* Tam.—*Vangalapatchi.*

Sheets of copper are kept in contact with grape husks or tamarind pulp for weeks together when during fermentation copper becomes oxidized and combines with acetic acid formed by grape sugar. This combination is scraped off and dried in the sun. Powder or masses of bluish-green or pale-green colour containing many silky crystals, of a coppery taste ; partially soluble in water, insoluble in alcohol.

Actions and uses.—Local, stimulant and escharotic, used as an application for indolent ulcers, warts, chancres and for chronic tuberculous growths in powder or mixed with honey or vinegar under the name of linimentum Æruginis.

Cupri Acetas.—Copper acetate.—Dissolve verdigris in acetic acid. Another method.—Precipitate solution of acetate of lead with copper sulphate. Efflorescent, colourless, deep-green prisms or crystals, without any odour and of nauseating metallic taste. Soluble in water 1 in 15, alcohol 1 in 135. Dose—⅛ to ¼ gr. Solution 1 per cent.

Actions and uses.—Alterative. Given in skin diseases, scrofula, epilepsy. Locally used in apthous ulcers ; as injection in gonorrhœa.

Cupro-hæmolum—Cupro-hæmol.—A dark chocolate-coloured powder, containing hæmol with 2 per cent. of metallic copper. Dose —2 to 8 grs.

Actions and uses.—Given in tuberculosis, scrofula, nervous diseases. It is given to increase the quantity of hæmoglobin in the blood. It also increases the weight of the body.

Silicate of copper and sulphate of aluminum with iron and zinc.

Vernacular.—Eng.—*Azure Stone;* Guz. and Hind.—*Lasavarde Lagburd;* Malay.—*Laswardi;* Portguese—*Lapis Verde;* Ancients—*Lapis Lasuli.*

A crystalline stone, very hard, of a rich blue colour, matted here and there with thin scales of abraka; used as collyrium.

Actions and uses.—Astringent, used as collyrium in eye diseases. In native practice it is used as an ingredient in purgative powders and in other compounds.

Cupri Arsenis—Copper arsenite—Pure Scheele's green. A pale-green powder, used in cholera, dysentery, typhoid fever, &c. Dose—$\frac{1}{100}$ to $\frac{1}{25}$ gr.

Cuprum Aluminatum—Lapis Divinus.—Fuse equal parts of alum, copper sulphate and potassium nitrate with camphor $\frac{1}{50}$ part.

Cupri Sulphas, B.P.—Cupric sulphate.

Vernacular.—Eng.—*Blue Stone, Blue Vitriol, Sulphate of Copper;* Arab.—*Zangbar Kalakanda;* Beng.—*Tutia;* Burm.—*Dok-ta-tsha;* Chin.—*Sheb-tan Taufan;* Cing.—*Pilmanicum;* Guz.—*Marathuthu;* Hind.—*Morluth, Nila-tutia;* Pers.—*Zahe-sab-sa;* Sans.—*Tuthan, Shikhi Kantha;* Tam.—*Turushu, Nila-tutam;* Tel.—*Turishu.*

Morathuthuis a corruption of Mohora-i-Tuti, which means parrot's stone. Shikhi Kantha—Shiki (a peacock) and kanth (the neck)—an allusion to the colour of the peacock's neck resembling the colour of blue stone.

Found in nature in the water of copper mines. Prepared by the action of sulphuric acid on copper or on cupric oxide and water. Another mode—Fuse copper pyritis, dissolve in hot water, evaporate and crystallize. Large crystals or blue triclinic prisms without any odour, and of a styptic metallic taste, soluble in cold water (1 in 3·5) and very soluble in glycerine; nearly insoluble in alcohol. Dose—as an astringent, $\frac{1}{4}$ to 2 grs.; as an emetic, 5 to 10 grs.; as an injection, 2 to 10 grs. in an ounce. Used as solution, injection, sticks and pastiles.

Cupri Oleas—Copper Oleate. Prepared by double decomposition of a hot solution of copper sulphate 3 in 8 of water, added to a hot solution of soap 8 in 32 of water and drying the precipitate. A dark-green unctuous mass; used as a plaster for warts, corns, &c. Unguentum Cupri Oleatis.—Oleate of copper 1, petroleum cerate 4. Melt and make ointment with vaseline.

Physiological action.—Copper and its salts are highly irritant. The inhalation of cuprous fumes or eating fruits cooked in a copper

vessel gives rise to gastro-intestinal irritation. If slowly taken and for a long time as in the case of workers in brass foundry, it often causes nausea, vomiting, colic, diarrhœa, gastric or bronchial catarrh, and great emaciation ; very often a fit of ague sets in followed by profuse sweats and chills. It gives rise to gout, chronic nephritis, and progressive loss of motor power over the limbs. In chronic cases there is found a green line of sulphide along the margin of the gums and increased flow of saliva. They give rise to a coppery taste in the mouth, nausea with green vomiting, purging of blood and mucous with depression of the heart and respiration. In some cases severe headache, want of co-ordination, coma and convulsions occur. The liver becomes atrophied, and the lungs get congested and consolidated.

Cupri sulphas in one large dose is a prompt and efficient emetic producing vomiting without nausea or depression. In minute doses it is a nervine tonic and gastro-intestinal astringent. Its effect on the mucous membranes is to diminish secretions. Externally in a solid form it is an escharotic or a mild caustic and styptic, and in solution a local astringent and stimulant. *Therapeutics.*—Given in acute diarrhœa and in the later stages of dysentery. Sulphate of copper is a decided nervine tonic and given in epilepsy, chorea, in general nervous debility, hysteria and facial neuralgia. In large doses it is used in poisoning by narcotics and in pseudo-membranous croup after the membrane has become loosened. Externally, as styptic and caustic, solid sulphate is applied to apthous and corneal ulcers, cancrum oris, chancres and to indolent granulations as in the eye-lids. As an escharotic it is rubbed for some time on warts, fungoid growths, &c. As a lotion ¼ gr. to one ounce it is used for weak, indolent ulcers, to lessen excessive discharges from the eye, vagina, urethra, in gonorrhœa, leucorrhœa and in purulent ophthalmia. Copper pastilles when burnt destroy bugs, mosquitoes and fleas. Unguentum cupri oleas is a parasiticide and a local stimulant, used for ringworm, eczema, tinea and for indolent ulcers, warts, corns, for removing freckles, &c. Ointment of the acetate of copper is applied in eczema and herpes.

Bismuthum, B.P.—Exists free in nature. Found nearly pure in rocks. In India it is found in one of the ores from antimony mines near Moulmein in Burmah in combination with silver and in small quantities in Cashmere.

Bismuthum Purificatum.—Purified Bismuth.—Fuse together metallic bismuth, cyanide of potassium and sulphur with carbonates of potasssium and sodium or with nitrate of potash. It is a brilliant

crystalline metal, very brittle, and of a pinkish or reddish white colour. It is the basis of the medicinal preparations of bismuth and bismuth salts.

Preparations of bismuth are sedative and slightly astringent, used as an insufflation in nasal catarrh and as an injection into the urethra in gonorrhœa. As absorbent their action is increased if combined with antiseptic organic compounds, such as the sulphites and salicylates, also napthol, phenol, pyrogallol, bromo-phenol compounds, &c. Bismuth compounds check the fermentative processes which form ptomaines, hence valuable in several infectious diseases and in gastric and intestinal disorders. They do not interfere with intestinal digestion.

Liquor Bismuthi et Ammonii Citras, B.P.—Syn.—Solution of Bismuth and Ammonium Citrate.—Dissolve subnitrate of bismuth 7, nitric acid 5, in water, and a solution of potassium citrate 7, potassium carbonate 2, and boil. Dissolve the precipitate when cold with ammonia water and add water to make 100.

Each drachm contains 5 grs. of bismuth citrate or 3 grs. of bismuth oxide.

A colourless solution of a saline metallic taste. Sp. gr. 1·070. Dose—½ to 1 drachm.

Actions and uses.—Astringent. More rapid in action and less irritating than other salts of bismuth. It is precipitated in the stomach by the action of the acid of the gastric juice. It is given in dyspepsia, vomiting, pyrosis and diarrhœa due to relaxation of the intestinal mucous membrane.

Bismuth Benzoas.—Heat together a mixture of benzoic acid and hydrated oxide of bismuth in water. White tasteless powder, soluble in mineral acids, insoluble in water; it contains 27 per cent. of benzoic acid. Used as dusting powder. Dose—5 to 20 grs.

Actions and uses.—Antiseptic; given in gastric and intestinal affections. Externally like iodoform the powder is applied to wounds.

Bismuth Sub-benzoas.—Heat bismuth nitrate with potassium nitrate and sodium benzoate, wash the precipitate with alcohol and dry. A white powder, insoluble in water.

Actions and uses.—Antiseptic. A valuable substitute for iodoform used as a topical application to soft chancre.

Bismuthi Carbonas, B.P. Syn.—Bismuth oxycarbonate, pearl-white bismuth carbonate.

Prepared by the action of a solution of ammonium carbonate on a solution of bismuth nitrate. A whitish powder without any odour or taste. Insoluble in water and alcohol, but soluble in dilute nitric acid. Dose—5 to 20 grs.

Used as pastillus bismuthi carbonatis, 3 grs. in each; also with morphinæ acetate, gr. $\frac{1}{40}$ in each. Trochiscus bismuthi compositus, B.P., contains bismuth carbonate, heavy magnesium carbonate, each 2 grs. precipitated calcium carbonate 4 grs. for one lozenge.

Actions and uses.— Astringent and sedative; given in diarrhœa, and chronic dysentery; being very soluble in the secretions of the stomach, it is less likely to constipate and blacken the stools.

Bismuthi Citras.—Syn.—Bismuth citrate.—Boil together bismuth subnitrate, citric acid and water, and evaporate. A white amorphous or crystalline powder without any taste or odour, soluble very slightly in water. Dose—2 to 5 grs.

Actions and uses.—Stomachic and astringent. The same as those of bismuth subnitrate, given in vomiting, dyspepsia and diarrhœa with fever.

Bismuthi et Ceril Salicylas.—A double salt recommended for intestinal disorders. Dose—5 to 20 grs.

Bismuthi Iodopyrogallate.—A fine amorphous yellowish red powder, insoluble in water.

Actions and uses.—Antiseptic. Used in surgical and operative cases.

Bismuthi Loretinas.—Prepared by a combination of bismuth and loretin. Dose—8 grs. Used as desiccant for its drying effect on wounds. Internally given for diarrhœa of phthisis in the last stage.

Bismuthi Oleas.—Syn.—Bismuth Oleate, Oleatum Bismuthi.—By the interaction of a bismuth salt with curd soap. An unctuous substance.

Actions and uses.—Emollient, soothing, astringent and sedative; used in piles, for skin eruptions as acne, sycosis and other pustular eruptions and in sun-burnt face, erysipelas and in gonorrhœa, gleet and other skin irritations.

Bismuthi Oxidum, B.P.—Bismuth oxide.—Boil subnitrate of bismuth with solution of soda. A slightly brownish yellow powder, insoluble in water, soluble in nitric acid. Dose—5 to 20 grs.

Actions and uses.—Astringent and sedative; given in diarrhœa, and chronic dysentery with fœtid and mucous stools.

Bismuthi Oxybromidum.—A yellowish fine powder. Dose—5 to 10 grs.

Actions and uses.—Chiefly used in the treatment of nervous dyspepsia, gastric pain and vomiting.

Bismuthi Oxychloridum—Bismuth Oxychloride.—An impalpable powder of neutral reaction, insoluble in water. Dose—5 to 20 grs. Used as a cosmetic (Blanc de perle), pearl white. It gives pearly gloss to the skin. Unguentum bismuthi oxychloridi 1 to 15 of vaseline. Pessaries and suppositories contain 10 grs. in each. Dusting powder.

Actions and uses—Antiseptic and non-irritant; it is preferred to other salts of bismuth. It coats the mucous membrane and adheres to it; hence its powder is used in irritable condition of the mouth, throat, vagina and rectum. As an insufflation to the larynx it is very beneficial. As a gastric tonic it is given in dyspepsia and acidity of the stomach.

Bismuthi Oxyiodidum—Bismuthi oxyiodide or subiodide of bismuth. A brownish red amorphus powder, of a slight iodine odour. Insoluble in water, alcohol or ether. Dose—5 to 10 grs. Antiseptic—a good substitute for iodoform. Locally used as a dusting powder on ulcers. As an injection (1 to 100) in gonorrhœa and as an ointment for fissures and ulcers in the rectum. Given internally in gastric ulcers.

Bismuthum Peptonatum.—Dose—80 grs. A dry brown powder, contains 3·5 per cent. of bismuth oxide. It is highly assimilable.

Phenol Bismuth—Bismuthi Phenylicum—Carbolate of Bismuth.—It contains 72·6 per cent. of bismuth and 22 per cent. of phenol. A dusty white or violet-coloured dry powder. Insoluble in water. Dose—10 to 30 grs.

Actions and uses.—Astringent and antiseptic. Used in chronic catarrh of the bowels and diarrhœa.

Bismuthi Phosphas.—Prepared by heating bismuth oxide, sodium carbonate and phosphoric acid. Contains 20 per cent. bismuth oxide. Soluble in water (1 in 3). Dose—3 to 8 grs.

Actions and uses.—Intestinal antiseptic, astringent and tonic; used in acute catairh of the stomach and intestines, and in diarrhœa.

Bismuthi Salicylas, B.P.—Syn.—Bismuth salicylate—Bismuth oxysalicylate.—Obtained by the double decomposition of bismuth nitrate and a solution of sodium salicylate. Contains 62 to 64 per cent. of bismuth oxide, a white or nearly white amorphous powder, insoluble in water and alcohol or glycerine. Dose—5 to 20 grs.

Preparations.—Mistura anti-choleraica No. 1.—Salicylate of bismuth and cerium 5 grs., compound powder of cinnamon 7½ grs., compound tincture of camphor 30 ms., compound tincture of chloroform 20 ms., aromatic spirit of ammonia 20 ms., essence of peppermint 10 ms., chalk mixture 1 oz. Dose—1 oz.

Mixture No. 2.—Aromatic sulphuric acid 15 ms., compound tincture of camphor 30 ms., compound tincture of chloroform, tincture of coto ā ā 20 ms., syrup of orange flowers 1 dr., peppermint water 1 fl. oz. Dose—1 oz.

Diarrhœa and Cholera Mixture:—Aromatic confection 9 grs., tincture of catechu 30 ms., aromatic spirit of ammonia 9 ms., compound tincture of cardamoms 18 ms., tincture of opium 3 ms., chalk mixture 1 oz. Dose—1 oz.

Actions and uses.—Astringent, sedative and intestinal antiseptic; same as other salts of bismuth, but owing to its containing salicylic acid it is better borne by the stomach, and is serviceable in dyspepsia due to fermentation and is also used in diarrhœa of phthisis and dysentery and in diarrhœa of typhoid fever. Very useful for children in intestinal tuberculosis. In chronic gastric and intestinal disorders and in dilatation of the stomach it is very useful. Externally it is used like iodoform. Bismuthi et cerii salicylas is recommended for sickness, diarrhœa, dysentery and ulceration of the bowels.

Bismuthi Subnitras, B.P.—Syn.—Subnitrate of bismuth, bismuthum album, bismuth oxynitrate—*White Bismuth.*—Dissolve purified bismuth in nitric acid, evaporate, add water to the precipitate, and dry. A heavy white minutely crystalline powder without any odour, nearly tasteless, insoluble in water and alcohol, soluble in acids. Dose—5 to 20 grs.

Preparations.—Pulvis bismuthi compositus—Ferrier's snuff. Contains morphine hydrochloride 1 and bismuth subnitrate 180 and acacia 60. Used in coryza with or without powdered cubebs.

Mistura bismuthi et pepsinæ composita. Contains besides bismuth pepsin and ammonia, Liq. opii sed 3 ms., acid hydrocyanic dil ℥ ms., Tincture of nux vomica 3 ms., water to 60 ms. Dose—30 to 60 ms.

Glycerinum bismuthi nitratis 1 to 8, application in eczema.

Physiological actions.—The insoluble salts of bismuth are used externally and act as sedative to the end organs of the nerves. The soluble salts pass into the blood and act as gastric tonic and also as feeble astringent. They become converted into sulphide, which gives dark colour to the stools and to the tongue. In very large doses and when taken for a long time they act as poison, developing a black line round the margin of the gums, causing headache, irritability of the stomach, œdema of the feet and fœtid urinous odour of the breath. Bismuth subnitrate is astringent, antiseptic and sedative. As a sedative it is given in all irritative conditions of the stomach and intestines. *Therapeutics.*—Largely used in dyspepsia, gastralgia, gastrodynia, vomiting, pyrosis, ulceration of the stomach and intestines, atonic diarrhœa, phthisical diarrhœa and in advanced stage of dysentery. In cholera it is of great benefit. Its action seems to be partly mechanical. Externally it is used as a dusting powder on wounds and ulcers, fissures of the anus, cracked nipples, in acne rosacea, stomatitis, sore mouth, eczema, intertrigo, &c. Occasionally it is used as an injection in leucorrhœa, gonorrhœa, gleet and rectal irritation. As a snuff it is used in coryza, in nasal pharyngeal and laryngeal irritations, &c. In fœtid feet and in burns the ointment is applied with benefit. Mistura bismuthi et pepsinæ compositus is given in chronic diarrhœa. As an antiseptic, Ferrier's snuff is used in ozœna and other fœtid discharges.

Bismuthi Sulphis.—A white powder soluble in acids only, when sulphurous acid is set free. Dose—5 to 30 grs. As an antiseptic, anti-fermentative and anthelmintic. Given in fermentative dyspepsia and diarrhœa. The sulphite under the action of the acid juice in the stomach gives off sulphurous acid. Also given for dislodging worms.

Bismuthi Sulpho-phenylas—Bismuth Sulpho-carbolate.—A reddish brown powder sparingly soluble in water. Dose—3 to 8 grs. As an intestinal, disinfectant, and antiseptic, it is used in feverish patients with fœtor from the mouth, coated tongue, and also in dyspepsia, and as an intestinal disinfectant in cases of fermentation in the intestinal canal.

Hydrargyrum, B.P.—Mercury.

Habitat.—South of Europe, America, Australia, and Japan.

Vernacular.—Arab.—*Abuk, Zibakh ;* Beng.—*Pârâ ;* Burm.—*Pada ;* Can.—*Pada Kasa ;* Cing.—*Rasadiya ;* Chin.—*Shiorryyin, Hung ;* Duk.—*Pâra ;* Eng.—*Mercury, Quicksilver ;* Guz.—*Paro ;* Hind.—*Para ;* Malyal.—*Rassam ;* Mar.—*Para ;* Pers.—*Simab, Jivah ;* Sans.—*Parada, Rasa ;* Tam.—*Irasham ;* Tel.—*Rasam Padâ, Rasam.*

Mercury is sometimes met with free in nature in the form of globules, but mostly found as sulphide or native cinnabar. To obtain it, fuse native mercuric sulphide-cinnabar with lime and scraps of iron, or roast it in the air and conduct the vapours into a condensing chamber and allow the sulphurous acid gas to escape. Purification of commercial mercury.—Re-distil and wash mercury with dilute hydrochloric acid. The native mode of purifying mercury.—Intimately rub together mercury, brick dust, garlic, add water, and heat the paste over a fire.

Liquid at ordinary temperature, divisible into spherical globules mobile and of a shining silver white lustre ; without any odour or taste, slowly volatilizing at ordinary temperature. Insoluble in water and in hydrochloric acid or cold sulphuric acid, but soluble in nitric acid and in hot sulphuric acid. It readily volatilizes at a temperature of red heat without any residue.

Preparations of Mercury.—Hydrargyrum cum Creta, B. P. Mercury with chalk, Gray powder (1 in 3). A light gray dampish powder free from grittiness, without any odour and almost without any taste, insoluble in water. Dose—1 to 5 grs. Given in dyspepsia and diarrhœa in children with vomiting and offensive stools. Also given in tonsillitis. Pilula Hydrargyri, B.P. (1 in 3). Blue pill, Mercurial pill. Dose—1 to 8 grs. Emplastrum Hydrargyri, B.P. (1 in 3). Mercurial plaster. Emplastrum Ammoniaci cum Hydrargyro, B.P. (1 in 5), Ammoniacum and mercury plaster. Unguentum Hydrargyri, B.P.—Blue ointment, Mercurial ointment (48½ p.c.) Used externally with friction. Unguentum Hydrargyri Compositum, B.P. (19½ p.c.). Mercury ointment 10, yellow wax 6, olive oil 6, camphor in flowers 3. Linimentum Hydrargyri, B.P. (1 in 6). Contains strong solution of ammonia 10, camphor liniment 90, mercury ointment 30. Lanolinum Hydrargyri. Mercury 100, lanoline 200, mercurial ointment 5, mutton suet 50, used as an inunction in syphilis. Oleum Cinereum, Injectio Hydrargyri Hypodermica, Grey Oil. Mercury 39, mercurial ointment 2, and vaseline oil 59. Dose—1½ to 2 ms. For syphilis injected deeply into the back. Plaster Mulls.—Every square inch contains 1 gr. mercury, also with ⅜ of a gr. of carbolic acid and ½ gr. of oxide of zinc. Alanine Mercury—Mercury-amido-propionate—Hydrargyri amido-propionas.—Occurs in minute white needles, soluble in water (1 in 3). Dose—$\frac{1}{12}$ to 1½ of a gr. Given

internally and also injected hypodermically in syphilis. Para. Kajali (Mercury Bhasm).—Prepared in a manner similar to that of grey powder, substituting sulphur for prepared chalk. Dose—1 to 3 grs.

Physiological action.—Mercury is tonic, alterative, purgative, indirect cholagogue, antiphlogistic, antiseptic, and sialagogue. Some of its salts are poisonous and corrosive, others are local caustic. Mercury as a metal is inert, but when taken into the system it combines with the acids and fluids of the body. It is then easily absorbed by the skin, the mucous membranes, lungs and stomach, and passes into the blood as oxyalbuminate. In the stomach it is converted into double chloride of sodium and mercury. It unites with the albuminous juices and is easily absorbed. In the intestines only a small portion of it is absorbed; the rest being converted into a sulphide and eliminated with the fœces. In small doses it acts as a blood tonic. It increases the number of red corpuscles and the body weight. In large doses it impoverishes the blood, lessens its coagulability, diminishes the red corpuscles, lessens oxygenation, promotes the waste of tissues, and disorders nutrition and digestion. It stimulates the salivary, duodenal and the pancreatic glands and the bile ducts and thus increases the flow of bile. It also stimulates the liver cells and hence acts as an indirect cholagogue. It may be found in the blood, saliva, milk, urine, sweat, bile, pus, also in various tissues of the body. Over-dose or long continued use of mercury produces a set of symptoms known as mercurialism, which consists of a metallic taste in the mouth, profuse salivation, swollen and spongy gums, foul breath, swelling of the tongue, ulceration of the mucous membrane of the mouth, lips and tongue, loosening of the teeth, &c. At the later stages, nutrition becomes impaired, it produces emaciation, œdema, extreme weakness, bilious diarrhœa and certain nervous symptoms as headache, trembling, neuralgia, insomnia, coma, convulsions or paralysis. In pregnant women it leads to abortion. Mercurial preparations are almost a specific in secondary syphilis, but not in its tertiary form. Salivation is readily produced by blue pill, next by calomel, and still less readily by gray powder. Some persons are salivated after a single dose. Children are less susceptible to its influence. Inhalation or vapours of mercury affect the brain; inunction and internal administration, &c., rapidly salivate. *Therapeutics.*—As an alterative, grey powder or blue pill or any other like preparation is used in dyspepsia, constipation, due to morbid gastric secretions, giving rise to foul breath, coated tongue and dryness of the mouth, and occurring in the course of fevers and acute hepatic or pulmonary diseases. It empties the gall-

bladder and by relieving congestion increases the hepatic and renal secretions. It causes the absorption of all inflammatory products and morbid serous fluids as in dropsies and effusions in joints and cavities. In diseases of the brain and the spinal cord, at least in their primary stages, it relieves inflammation. In syphilitic nodes, enlarged glands, gunmata, &c., if judiciously given it acts as a specific. In recently deposited exudations it is superior to iodine. In affections of the serous membranes it is of greater benefit than in those of the mucous membranes. It benefits the strong and vigorous constitutions. It is contra-indicated in scrofula, scurvy, rickets, anæmia, albuminuria and hæmorrhagic diathesis. In its pure and liquid form it is rarely used medicinally, though occasionally it has been given in large quantities in intestinal obstructions. Hydrargyrum cum creta or Gray powder is especially suited to children, while pilula hydrargyri or blue pill is a convenient mode of administering mercury in its pure state for syphilis and other states of the system where rapid absorption is not the object. In dyspepsia it is very beneficial as an adjunct to other purgatives. The liniment, plaster, and ointment act by the mercury becoming absorbed into the system. These are very valuable additions to the internal treatment. Oleate of mercury is used as inunction. Certain preparations of this drug are administered in the form of vapour bath or fumigations. Among the natives mercury is used extensively, often with frightful results. Locally it has been applied to syphilitic ulcers, enlarged joints, and to tumours to bring about absorption.

Hydrargyri Benzoas—Mercuric Benzoate.—A white crystalline powder, insoluble in cold, but slightly soluble in hot, water. A one per cent. solution in sterilized almond oil does not undergo any decomposition. Used as hypodermic injection with cocaine and chloride of sodium.

Hydrargyri Carbolas—Phenol Mercury—Mercury Carbolate.—Prepared by the double decomposition of mercuric chloride and an alcoholic solution of carbolic acid in caustic potash. A neutral salt in the form of white amorphous powder. Dose—$\frac{1}{2}$ to 2 grs. Used as pills after food, in syphilis. It produces no gastric disturbance.

Hydrargyri Cyanidum.—Mercury Bicyanide or Mercuric Cyanide.—Colourless or white prismatic crystals, becoming dark coloured on exposure to light. Soluble in water (1 in 12·8), alcohol (1 in 15); without any odour and of a bitter metallic taste. Dose—$\frac{1}{100}$ to $\frac{1}{10}$ of a gr. It is not decomposed by alkalies. Used as pills. As

gargle 1 in 10,000. As Injectio Hydrargyri et Cocainæ Hypodermica—contains Cocaine hydrochlorate $\frac{1}{2}$ gr., cyanide of mercury $\frac{1}{4}$ gr. and water 15 ms. As an antiseptic and germicide. Applied as a lotion and given in pills in syphilitic sores and skin rashes. In diphtheria $\frac{1}{250}$ of a gr. with $\frac{1}{2}$ m. of tincture of aconite and honey is given internally, and used locally as a gargle 1 in 10,000.

Hydrargyri Oxycyanidi.—White crystalline powder, soluble in water. Used as solution ·6 per cent., injection ·2 per cent. Antiseptic and germicide. As injection in gonorrhœa; the solution is externally applied to wounds, to the throat in diphtheria, to the skin in erysipelas and in skin diseases.

Hydrargyri Gallas.—Mercurous Gallate.—Green amorphous powder, insoluble in water. Dose—$\frac{1}{2}$ to 1 gr. Antisyphilitic, used in primary and secondary syphilis.

Hydrargyri Iodidum Rubrum, B.P.—Mercuric Iodide—Mercury bin iodide—Red iodide of mercury.—Prepared by double decomposition between corrosive sublimate 4 parts and potassium iodide 5 parts. A fine vermilion coloured crystalline powder without any odour or taste, nearly insoluble in water, soluble in alcohol (1 in 130), in castor oil (1 in 25), freely soluble in ether, and in solutions of potassium and other iodides and in solution of perchloride of mercury. Used in syphilis; also as an emmenagogue, and as a pigment in diphtheria. Dose.—$\frac{1}{32}$ to $\frac{1}{16}$ gr.

Preparations.—Hydrargyri et Potassii Iodidum—Potassio Mercuric Iodide. Dose—$\frac{1}{10}$ to $\frac{1}{4}$ gr. Yellow crystalline prisms. Given in syphilis and as an antiseptic lotion (1 in 8,000). Pilula Hydrargyri Iodidi Rubri ($\frac{1}{8}$ gr.) et Potassii Iodidi (4 grs). Unguentum hydrargyri iodidi rubri, B.P. (20 grs. in 480 grs. of Benzoated lard). Injectio Hydrargyri Iodide Rubri Hypodermica. Dose—2 to 6 ms. Contains 1 gr. of mercuric iodide, water 64 ms., iodide of sodium 1 gr. Liquor Arsenii et Hydrargyri Iodidi, B.P.—Donovan's solution. Dose—5 to 20 ms. after meals; Arsenious Iodide and Mercuric Iodide each 1 in 100 of water. Pilula Arsenii et Hydrargyri Iodidi, arsenious iodide, mercuric iodide of each 1 gr. in 12 pills, often combined with iodide of iron 2 grs. each pill.

Actions and uses.—Cholagogue, emmenagogue, anti-fermentative, diuretic and germicide; as a bactericide it possesses double the power of corrosive sublimate, while it is less poisonous. Used in syphilis, scarlet fever, measles, chicken-pox, whooping cough, enteric fever, pyæmia, and puerperal fever. It is, however, chiefly used as a pigment

externally in enlarged glands and syphilitic nodes, diphtheria, and elephantoid swellings. In enlarged spleen and goitre the ointment is applied, and the patient kept before a hot fire or in the direct sunlight. A solution (1 in 5,000) with sodic chloride is used in gonorrhœa, ozœna, ophthalmia neonatorum and diphtheria. As a spray 1 in 500 it is used in enlarged tonsils. Solution (1 in 1,500) is used as a wash for the vagina in leucorrhœa. As a germicide, a solution containing bin iodide of mercury $\frac{1}{50}$ gr., iodide of potassium 1 gr., chloral hydrate 1 gr. is given in infantile diarrhœa.

Hydrargyri Iodidum Flavum.—Green or Proto iodide of mercury—Yellow mercurous iodide.—Combine mercury and iodine or mix solutions of mercurous nitrate and potassium iodide. Remove the filtrate. The precipitate is green or yellow powder, darkens on keeping and on exposure to light. Insoluble in water, alcohol or ether. Dose—$\frac{1}{10}$ to $\frac{1}{3}$ gr. Used as unguentum hydrargyri iodidi flavi (1 to 8). Pilulæ Hydrargyri Iodide Viridis (Flavi). $\frac{1}{4}$ gr. in each.

Actions and uses.—Stimulant and alterative, in large doses active irritant poison ; given internally in scrofulous and venereal affections. In chronic skin diseases as herpes, pityriasis, acne, lepra and psoriasis, an ointment with atropine is applied; also to venereal eruptions and to indurated fascia of the hand to soften them. Under its use in diabetic patients the amount of sugar is greatly lessened. It should not be given with a soluble iodide. Mercury bin iodide is thus formed.

Hydrargyri Naphthol Acetas Mercur—B—Naphthol Acetate.—An amorphus white powder, insoluble in the usual solvents, melting to a green oily liquid. Dose—$\frac{1}{2}$ to 1 gr. Used as gauze salve, mull, &c. Anti-syphilitic mixed with kieselguhr. Used as a dusting powder for wounds.

Hydrargyri Nitras—Mercurous nitrate.—Colourless monoclinic crystals. Soluble in water. Used as lotion (1 in 30) or ointment. Antisyphiltic. Given for syphilitic sores. Internally it is rarely used.

Liquor Hydrargyri Nitratis Acidus, B.P.—By the action of nitric acid on mercury. Colourless, strongly acid. Used as a caustic. Unguentum hydrargyri nitratis, B.P.—Mercuric nitrate ointment. Citrine ointment, unguentum citrinum (1 in 15). Contains mercury 1, nitric acid 4, lead 4, olive oil 7. Unguentum hydrargyri nitratis dilutum, B.P.—Diluted ointment of mercuric nitrate—Brown citrine ointment (1 of citron ointment to 4 of soft paraffin).

Actions and uses.—The solution is a powerful superficial caustic and escharotic. The pain is transient, but severe. Externally applied to chancroid and syphilitic vegetations and warts, also cancerous and malignant ulcers. In a diluted form it is used in various obstinate skin affections. The ointment is a stimulant application in foul ulcers, chronic diseases of the skin and in tinea ciliaris. For the delicate skin, milder ointment may be used.

Hydrargyri Oleas, B.P.—Mercuric oleate—Oleate of mercury.—Take mercuric chloride 1 oz., dissolve it in boiling water; to this add powdered hard soap 2 ozs. and oleic acid 1 dr. Mix, boil over a fire, then when cold, dry on a sand bath. A substance of unctuous consistence of a light greyish-yellow colour, of a saponaceous odour, liable to darken if kept for a long time. Used as unguentum hydrargyri oleatis, B.P., 1 to 3 of benzoated lard. Oleatum hydrargyri 10 per cent., yellow mercuric oxide 1, and oleac acid 9. Oleatum hydrargyri (10 per cent.) cum morphina. Contains morphine 1, dissolved in 60 of oleatum hydrargyri.

Actions and uses.—A very convenient form of administering mercury through inunction and an excellent and cleanly application. It is used as a counterirritant in inflammatory and syphilitic exudations without ulceration and in syphilitic skin affections. 5 per cent. of the oleate with $\frac{1}{8}$ part of ether is used as a parasiticide in scabies, pediculi and ringworm. It completely destroys the fungus. In persistent inflammation of the glands and joints (synovitis) it is very useful.

Hydrargyri Oxidum Flavum, B.P.—Yellow mercuric oxide. Add solution of caustic soda in excess to a solution of corrosive sublimate and precipitate. A yellow amorphous powder, without any odour, of a metallic taste, insoluble in water or alcohol, wholly soluble in nitric or hydrochloric acid. Dose—$\frac{1}{200}$ grs. Used as unguentum hydrargyri oxidi flavi, B.P. Contains yellow mercuric oxide 1, yellow paraffin 49. Chiefly used for eczema, ringworm and triturated with sugar of milk (1 to 1,000) for inflamed eyelids.

Actions and uses.—Gastro-intestinal antiseptic, used in disorders of the intestines due to the presence of micro-organism such as dyspepsia, catarrh of the stomach and intestines, typhus and typhoid fever, dysentery, cholera, &c. Its action is superior to that of mineral acids and salts of silver, bismuth or zinc. It prevents putrefactive changes which take place in the injested food and thus promotes nutrition and removes dyspeptic symptoms; but its chief use is for external purposes where it acts as a stimulating application in eczema,

ringworm, indolent syphilitic and scrofulous ulcers, enlarged glands as lupus, goitre, enlarged liver and spleen. The ointment of 2 grs. to 1 oz. of vaseline is used as a sedative application in granulations, in conjunctivitis and for lupus.

Hydrargyri Oxidum Nigrum.—Black oxide of mercury—Henman's soluble mercury.—A grayish black powder. Decomposes on exposure to light. Dose—¼ to 2 grs. Antisyphilitic; in combination with asparagin and with formamide has been used as injections.

Hydrargyri Oxidum Rubrum, B.P.—Syn.—Red mercuric oxide—Hydrargyri nitrico oxidum. Red precipitate. *Sapeti, Sipichand* (Hind.).—To prepare it, dissolve mercury in nitric acid and heat the mercurous nitrate until acid vapours cease to be evolved. Heavy orange-red crystalline scales or powder. On trituration it becomes yellow, without odour and of a metallic taste. Insoluble in water and alcohol. It differs from the yellow mercuric oxide merely in the latter, being destitute of crystalline texture and much more finely divided. Used as unguentum hydrargyri oxidi rubri, B.P.—Red precipitate ointment, ointment of red mercuric oxide. Contains red mercuric oxide 1, paraffin ointment yellow 9.

Actions and uses.—Externally irritant and escharotic, used as stimulant ointment to indolent ulcers, rupia, obstinate skin diseases, buboes, chancres, &c.; also in ophthalmia and chronic conjunctivitis. The powder is dusted over specks on cornea and in chancres, &c. The natives use it to destroy pediculi capiti.

Hydrargyri Oxysulphas—Hydrargyri Sub-Sulphas Flavus—Yellow mercury oxy-sulphate—Turpeth or turpeth mineral.—Add water to persulphate of mercury, the acid salt is dissolved out, leaving an insoluble yellow basic compound. A lemon-yellow powder. Heavy. Insoluble in water or alcohol, soluble in nitric acid and in hydrochloric acid (1 in 10). Dose—As an emetic, 2 to 4 grs.; as an alterative, ¼ to ½ gr. It is an ingredient in the preparation of calomel and bichloride of mercury. As an antisyphilitic given in syphilis. In large doses, a safe and prompt emetic.

Hydrargyri Perchloridum, B.P.—Hydrargyri chloridum corrosivum—Hydrargyri bichloridum—Corrosive mercuric chloride.

Vernacular.—Eng.—*Corrosive Sublimate;* Cing.—*Shaviramu;* Duk., —*Shaviram Shavir;* Hind.—*Tal Chikana Sambul;* Panj.—*Daraching;* Tam.—*Viram, Vagarasa Ras-pushpam.*

Tal chikna sumbul is erroneously believed to be a variety of arsenic (Hartala). Tala is an abbreviation of hartala. Chickna, moist or

humid: meaning moist arsenic. Tal chickna is by the Panjabis corrupted into Dar chickna or Dar ching. Sometimes the term Raskapur is applied to this salt, hence the confusion.

Heat a mixture of mercuric sulphate, chloride of sodium, and black oxide of manganese reduced to fine powder, and sublime. Black oxide of manganese is added to prevent the formation of calomel. Indian method.—Take para kajali, brick dust, alum and rock salt in equal parts; rub them together, put the whole in a closed crucible and fuse; or take para kajali, rock salt, sindhalona and chalk equal parts. Rub them together, then add nitre, put the whole in a covered crucible and apply heat. Rhombic, colourless crystals of various shapes and sizes, no odour, but acrid, styptic metallic taste and of an acid reaction, soluble in cold water (1 in 16) and in boiling water (1 in 2), in alcohol (1 in 3), in ether (1 in 4), and in glycerine on trituration (1 in 2). Dose—$\frac{1}{32}$ to $\frac{1}{16}$ of a gr.

Preparation.—Liquor hydrargyri perchloridi, B.P. $\frac{1}{16}$ gr. to 1 dr. Dose—½ to 1 fl. dr. Lotio hydrargyri flava, B.P.—Yellow wash (1 in 240 of lime water).

Hydrargyri et Ammonii Chloridum.—Sal Alembroth. Ammonio mercuric chloride, a double chloride of mercury and ammonium.—It contains one molecule of sublimate combined with two of ammonium chloride. Occurs as flattened rhombic prisms, freely soluble in water, alcohol and glycerine. ½ gr. in 10 ms. of water is used in syphilis as intramuscular injection into the buttocks. Alembroth gauze 1 per cent. of sal alembroth tinted with aniline blue. Alembroth wool contains 2 per cent. Alembroth cotton wool tissue 2 per cent. Used as dressing for eye cases. Eucalembroth gauze contains sal alembroth, eucalyptus oil and castor oil and tinted with magenta. Lotio Hydrargyri Acetica—Mercuric chloride 1, acetic acid 75, glycerine 75, alcohol 250, rose-water 500. To destroy pediculi. Pigmentum contra tineam.—Mercuric chloride 1, salicylic acid 9, phenol 10, glycerine 80. For ringworm. Sublimate disinfectant for cholera.—Sublimate ½ oz., hydrochloric acid 1 oz., soluble aniline blue 5 grs., water 3 gallons.

Sublimate pastils combined with sodium chloride and coloured blue, to produce a lotion 1 in 500 with 10 or 20 ozs. of water according to size. Vaselinum hydrargyri perchloride 1 in 1,000 of vaseline. For eye lotion 1 gr. in 8 ozs. and as injection for gonorrhœa and gleet 1 to 2 grs. in 8 ozs. As an antiseptic injection (1 in 10,000) for the ear discharges. Mixed with Fowler's solution, it is used as a pigment in diphtheria.

Hydrargyri Oleo Palmitas.—Formed by the double decomposition of perchloride of mercury and curd soap; occurs as a yellow unctuous body twice as strong as the 20 per cent. oleatum hydrargyri. Used as a plaster (1 to 3 of lead plaster) as a substitute for emplastrum hydrargyri. Glycerium hydrargyri perchloridi 40 grs. in 1 dr. For solution 1 dr. in 4 pints of water. Antiseptic cologne, an American speciality, containing corrosive sublimate (1 gr. in oz.) with thyme, eucalyptus and eau de cologne; used as a spray in sick-rooms.

Physiological actions.—Alterative, tonic, disinfectant, and parasiticide. It stimulates the cutaneous, salivary and urinary secretions. In small doses it causes absorption of deposits of lymph by stimulating the glandular system; it relieves glandular engorgements of the liver, kidneys, &c. The tonic effect is increased by the addition of hydrochloric acid. It is a most powerful antiseptic known. No germ is known to resist its action. In large doses it is a powerful irritant poison, producing gastritis, enteritis with nausea, vomiting, pain in the stomach, suppression of urine, bloody motions, collapse, convulsions and death. *Therapeutic uses.*—Given in constitutional syphilis, chronic skin eruptions and syphilitic rheumatism; in anæmia and chlorosis it is given with iron. In dropsy, glandular enlargements and in hepatic affections, liquor hydrargyri perchloridi with sodii iodidi is of benefit. Hypodermically it is used in cholera in India and also in syphilis. As an antiseptic in $\frac{1}{100}$ gr. doses combined with tincture of cannabis it is of benefit in diarrhœa and dysentery. As an internal disinfectant and during the plague epidemic large doses, as much as 2½ ozs. of the liquor per day were given without producing salivation. As a germicide and antiseptic it is used in disinfecting plague areas. As a germicide it is very beneficial as a wash (1 in 2,000) for vagina, or as a solution (1 in 1,000) in obstinate parasitic skin diseases, or as a lotion or ointment to promote healing of phagedenic ulcers, also as an injection in gonorrhœa, gleet, leucorrhœa. It is used to destroy pediculi capiti. The natives use hydrargyri iodidi rubri instead. In combination with arsenic it is used as an application to piles to produce ulceration and separation of the hæmorrhoidal mass, but it should be used with great caution, as it sometimes causes considerable injury to the surrounding tissues. As a local caustic, an alcoholic solution (1 in 5) is painted over carbuncles, anthrax, &c. In elephantiasis græcorum a 10 per cent. solution is injected near the part affected.

Hydrargyri Persulphas—Mercuric sulphate.—Prepared by boiling together 12 ozs. of sulphuric acid and 20 ozs. metallic mercury. Mercury is converted into mercuric sulphate. A heavy white crystalline powder, entirely volatilized by heat.

Used as unguentum hydrargyri persulphatis (15 grs. to 1 oz.).

Actions and uses.—Parasiticide—used for ringworm. A mild escharotic to be used with care.

Hydrargyri et Potassii Iodidum.—Potassio Mercuric Iodide.—It is formed by dissolving perchloride of mercury in excess of potassium iodide. In yellow crystals or prisms. Dose—$\frac{1}{16}$ to $\frac{1}{4}$ gr. Given in syphilis. Pilula Hydrargyri Iodidi Rubri et Potassii Iodidi (1 in 32 of Potassii Iodidi).

Hydrargyri Salicylas.—Mercury salicylate.—It contains 59 per cent. of mercury. A white crystalline powder. Slightly soluble in water, soluble in solutions of dilute alkalies and in solution of sodium chloride. Dose—$\frac{1}{8}$ to $\frac{1}{3}$ gr. Used as dusting powder or ointment 1 per cent. and used internally as antisyphilitic, and externally as a dusting powder for specific sores, chancre, and as an injection in gonorrhœa. It should not be given in large doses with potassium iodide.

Mercurial Sozoiodol.—Mercury di-iodo paraphenol sulphonate.—An orange red amorphous powder, insoluble in water, soluble in solution of sodium chloride or potassium iodide. Dose—$\frac{1}{2}$ to 1 gr. Solution (1 in 20) for intramuscular injection. Used also as ointment (2 to 20 per cent.).

Actions and uses.—Alterative, antisyphilitic, and antiseptic; given in syphilitic eruptions, ulcers, enlarged glands, parasitic skin diseases and diseased joints. The solution with solution of potassium iodide is used as an intramuscular injection in tertiary syphilis and in cases where iodide of potassium has failed.

Hydrargyri Subchloridum, B.P.—Syn: Mild mercurous chloride, hydrargyri chloridum, subchloride of mercury.

Vernacular.—Eng.—*Calomel;* Cing.—*Rosa Kurpûram;* Duk.—*Raskapur;* Hind.—*Raskapur;* Malyal.—*Rosa-Karppuram;* Tam.—*Rasha Karuppuram-Puram;* Tel.—*Rosa Karpuram.*

Natives call it Raskapur or mercuric camphor, as it is met with in heavy masses or pieces resembling camphor.

To obtain it, convert mercuric sulphate into mercurous sulphate by rubbing it with a second equivalent of mercury; then add chloride of sodium and sublime. A dull white heavy impalpable powder without any odour and nearly tasteless. The powder by long trituration becomes yellowish. Insoluble in water, alcohol and ether. It volatilizes by heat. Dose—$\frac{1}{2}$ to 5 grs.

Lotio Hydrargyri Nigra, B.P.—Black-wash. Black mercurial lotion : 30 grs. of calomel, ½ oz. glycerin, 1½ ozs. mucilage of tragacanth, limewater to make 10 ozs. Pulvis Basilicus : calomel 3, scammony 3, acid potassium tartarate 3, jalap 1, ginger 1, antimonial powder 1. Dose—4 to 8 grs. Pilula Hydrargyri Subchloridi Composita, B.P.—Pilulæ antimonial compositæ. Compound calomel pill. Plummer's pill ; 4½ grs. contain 1 gr. of calomel and 1 gr. of sulphurated antimony, 2 grs. of guaiacum resin and castor oil. Dose—4 to 8 grs. Unguentum Hydrargyri Subchloridi, B.P. Calomel ointment : Mercurous chloride 1, benzoated lard 9. Pilulæ Catharticæ Co.—Compound cathartic pills : calomel 1, extractum colocynthidis compositum 1½, extract of jalap ½, gamboge ¼ in each pill. Dose—1 to 3 pills.

Physiological Action.—A non-irritant alterative, purgative, cholagogue, antiphlogistic, anti-emetic, anthelmintic and sialagogue. It is a rapid and sharp purgative, only next in rapidity to croton oil. It is decomposed in the intestines and converted into an oxide. It increases the action of the secreting glands, frees the secretion of the stomach and intestines ; it also stimulates the liver and empties the gall bladder. As an antiphlogistic it is used with benefit in acute inflammatory, febrile and biliary affections, known by a coated tongue, foul breath, clay-coloured stools, nausea, loss of appetite, and constipation.

Therapeutics.—In tonsillitis, parotitis and other acute glandular inflammations of the throat and neck, calomel in very small doses is very effective. In diarrhœa and in fœtid stools of children due to over-feeding, dentition, &c., it renders the secretions healthy, removes the fœtor and checks the frequency. In obstinate vomiting, small doses given every hour are very efficient. In Asiatic cholera 18 to 20 grs. in 24 hours give colour to the motions. A combination of calomel and digitalis is given for cardiac dropsy. In typhoid fever 10 gr. doses may be given every morning with benefit and as antipyretic. The compound mercurial pill is used as an alterative in syphilis and chronic skin affections. Externally it is sedative to the skin and the mucous membranes. Black wash is used to promote the healing of chancres and other ulcers, especially of a syphilitic nature ; the ointment is used as antipruritic and absorbent in syphilitic skin diseases. In the presence of alkaline chlorides it is converted to some extent into perchloride in the saliva and thus acts as a disinfectant. 1 gr. of calomel with 2 grs. of chloride of sodium is injected into the gluteal region in syphilis.

Hydrargyri Succinimidum—Succinimide or imido-succinate of mercury.—A white, silky powder; soluble in water (1 in 25), slightly so in alcohol. Dose—$\frac{1}{8}$ to $\frac{1}{4}$ of a grain.

Used as solution 2 per cent. for hypodermic injection.

Actions and uses.—Antisyphilitic and alterative. Given in syphilis. It is mild and non-irritating, does not precipitate albumen and is free from local and secondary effects.

Hydrargyri Sulphuretum Nigrum—Mercurous sulphide—Arthops mineralis.

Vernacular.—Eng.—*Black Sulphide;* Sans.—*Rasa Sindura.*

Ras sindur—Ras mercury and sindur sulphide of lead. It resembles in colour sulphide of lead.

The natives prepare it by making a paste of mercury, sulphur, navasagar in the juice of lemons and drying over a sand-bath. Another method.—Roast together mercury and sulphur. Thin dark-red shining scaly pieces with a fibrous texture and interspersed with crystalline granules, mixed with shining particles, thus closely resembling abraka; colour reddish black resembling that of dried blood. It burns with a blue flame leaving no residue. Dose—1 to 2 grs.

Preparations.—A compound powder—ajirana kantaka rasa. Ajirana is derived from A "deprived of" and jirana or jirpat "to digest," ajirana meaning deprived of digestion—indigestion. Kantaka or kanta means "a thorn." This preparation is like a spike or thorn, by the dread of whose presence indigestion is said to disappear. It contains black sulphide of mercury, aconite, sulphur each one part, pepper, and ginger each six parts. Mix and triturate them together, make a paste in the juice of bhuiringani and dry over a sand bath. Dose—1 to 2 grs. Used in dyspepsia.

Sangrahni vajra kapat rasa.—To prepare it, powder together mica ash, rasa sindura, abrak bhashm, sulphur, jav khar, tankan khar, arani chhal, vekhand each one part, make a paste in the juice of arani, bhangra and bijorun, and roast; when ready, add atvish 5, mocharas 2, katho 1, and bhang 5. Dose of the powder 5 to 10 grs. To be taken in compound decoction of dhauriphul, moth, lodhra, belphal, gulvel each 5 parts, honey 10 parts and water to make 100 parts. Dose—1 oz.

Actions and uses.—As an alterative it is used to produce salivation in syphilis. It is given internally in syphilis, gonorrhœa, &c., in enlarged liver and spleen, chronic fevers, chronic dysentery and chronic dyspepsia.

Ajiranakantak rasa is largely used in indigestion, diarrhœa, colic and flatulence. Sangrahni vajrakapat-rasa is given in chronic diarrhœa and chronic dysentery.

Hydrargyri Sulphuretum—Mercuric sulphide—Red sulphide of mercury—bisulphuret of mercury—Hydrargyri sulphidum rubrum.

Vernacular.—Arab.—*Lunjefer;* Can.—*Ingalikâ;* Cing.—*Jâti Singam;* Duk.—*Shangraf;* Eng.—*Vermilion, Cinnabar;* Guz.—*Sangraf Hingalo;* Hind.—*Lanjafr, Shangarf, Hingol;* Mah.—*Hingul;* Malyal.—*Chaliyam;* Pers.—*Lanjafr, Shasgarf, Hingol;* Sans.—*Inghulam;* Tam.—*Singam;* Tel.—*Ingili jamu.*

Mercuric sulphide occurs as a dull-red mineral ore; when sublimed, it becomes dark scarlet, shining and crystalline. It is then known as cinnabar or vermilion. Heat together mercury and sulphur in equivalent proportions till the mass swells, and when cool, powder. Brilliant heavy grains or crystalline masses arranged in longitudinal strips of a scarlet-red colour. It stains the fingers when handled. It is without odour or taste; when heated, it becomes brown or black, but resumes its red colour again on cooling. It burns with a blue flame; insoluble in water and alcohol. Dose for fumigation—30 grs. Internally—$\frac{1}{30}$ to $\frac{1}{20}$ gr.

Preparations.—Hingul bhasm—Red sulphide ash. Red sulphide 4, orpiment 1, cloves 4. Make a bolus in the juice of fresh ginger, put it into a crucible, roast it over a fire, and reduce the whole to ashes. Dose $\frac{1}{8}$ to $\frac{1}{4}$ gr. A compound powder, *raj mragank rasa*—raja or raj which means a king; mraga or murag signifying a lion or deer; ank ankado meaning a nail, a hook or a scratch; and rasa means mercury. This mercurial preparation is like a scratch from the nail of a lion, the king of animals, or of a deer. According to Hindu idea, the lion is so strong or powerful an animal that even a scratch of its nail causes the death of a demon. This preparation is supposed to be so powerful that it is capable of removing or dispelling any inveterate disease, such as consumption, by a mere scratch, that is, by a dose or two of this preparation.

To prepare it, mix together red sulphide ash 3, gold ash 1, mica ash 1, manasil $\frac{1}{2}$, sulphur 2, shell ash (cowri bhasm) and tankan khar 1. Roast the mass over a fire. Dose—2 to 5 grs. Given in consumption and chronic diseases. Generally given with confection of black pepper, long pepper and honey.

A compound extract—Ichchabhedi-rasa or hajat bhedi-rasa.

Ichchha means inclination or desire, hajat frequent inclination or a constant desire, bhedi to remove or to pass copious motion. This

extract is given to remove constipation or to open the bowels. To prepare the extract, powder together hingalo, tankan khar, ginger (suntha), long pepper, pipali each one part ; danti-mula and triphala each four parts. Boil the whole in milk till reduced to the consistence of an extract. Dose—2 to 5 grs.

Anand bhairava rasa.—Anand means contentment with the existing health, a relief from bad or defective gastric and intestinal digestion ; bhairav, a demon or an evil-doer, one who misrepresents or misinterprets things, toxic agents which interfere with the proper or normal digestion of food ; ras a remedy. This preparation is supposed to be an agent in dispelling the demon or evil-doer and thus procuring relief from indigestion, dyspepsia, diarrhœa, colic, &c.

To prepare it, powder together hingalo 2, aconite (bachanaga) 1, miri 2, tankana khar 2, and long pepper 2, then add lime juice or juice of ginger to make a pill mass. Dose—5 to 10 grs. given in indigestion, dyspepsia, colic.

Actions and uses.—Red sulphide of mercury is generally used for fumigation in syphilitic affections. Internally, in very minute doses, the natives use it in syphilis. Red sulphide ash (Singraf bhasm) is used as an alterative in syphilis. Anand bhairav rasa is astringent and given in chronic diarrhœa and diarrhœa in fever. Raja mragan rasa is restorative, alterative and tonic, given in consumption, asthma and other chronic diseases. Ichhabhedi rasa is purgative, given in flatulence and constipation.

Hydrargyri Tannas—Mercurous Tannate.—A dark-green powder, without any odour or taste. Contains 50 per cent. of mercury. Not soluble in hydrochloric acid, freely soluble in alkalies and their carbonates. Dose—$\frac{1}{2}$ to 1$\frac{1}{2}$ grs.

Actions aad uses.—Antisyphilitic ; given in syphilis with satisfactory results. It does not cause any irritation of the bowels.

Hydrargyri Thymol Acetas—Mercury thymol acetate.—A white powder, soluble in dilute alcohol, insoluble in water. Dose—$\frac{1}{4}$ to 1$\frac{1}{2}$ gr.

Used as intramuscular injection (1 in 10), or as pills in syphilis.

Hydrargyri Zinco Cyanidum—Mercuro Zinc Cyanide.—Cyanide of zinc and mercury.—Obtained by the double decomposition of a cold saturated solution of zinc sulphate and of mercuric and potassium cyanides or by adding cold saturated solution of mercuric chloride to zinc and potassium cyanides. A white powder.

Used as mercuro zinc cyanide antiseptic gauze. It contains 2 or 3 per cent. by weight of the cyanide tinted with hæmatoxylin (pale blue). Antiseptic gauze should be moistened with $\frac{1}{1000}$ solution of perchloride of mercury before use.

Actions and uses.—Non-irritant antiseptic. An ointment is used in eczema and other skin affections.

Hydrargyrum Ammoniatum, B.P.—Ammoniated mercury, white precipitate of mercury, mercuric ammonium chloride. Prepared by the action of solution of ammonia on the solution of corrosive sublimate and by the washing of the resulting precipitate. White amorphous powder, without any odour and earthy styptic metallic taste, nearly insoluble in water and insoluble in alcohol and ether. Heated with excess of lime, it yields 79 per cent. of metallic mercury. Used as unguentum hydrargyri ammoniati, B.P.—Ointment of ammoniated mercury. White precipitate ointment 1 to 9 of paraffine ointment, white.

Actions and uses.—Local stimulant and parasiticide; used as a stimulating application for chronic skin diseases as prurigo, impetigo, herpes, &c., also used in scabies. Its chief use is, however, for destroying pediculi, for which purpose the ointment or the salt itself is used exclusively or mixed with rose water.

Hydrargyrum Naphthalicum—Naphthol Mercury.—A yellow neutral powder. Insoluble in ordinary media, without any odour. Contains 30 per cent. of mercury. Dose—$\frac{1}{2}$ to 1 gr. As dusting powder 1 or 2 parts to 98 of kieselguhr, or as a salve mull.

Actions and uses.—Antisyphilitic, given in syphilis and in typhoid fever. The ointment is applied to ulcers and wounds.

ORGANIC CARBON COMPOUNDS.

In this group are included drugs, prepared in the Laboratory and having the chemical composition similar to, or identical with, substances obtained from the animal and vegetable kingdoms. It has been the ambition of scientists for a very long time to be able to manufacture some of the organic substances. Their efforts have now been crowned with great success and in many cases far exceeding their expectations. These substances are often reproduced by a direct combination of the component elements or from apparent inorganic substances which were once organic in nature. Not only has this branch of chemistry revolutionized the domain of Materia Medica and medical science generally, but it has also advanced various arts and industries considerably.

It may be mentioned that, in all these compounds, the element carbon is invariably present: hence they have been termed by several writers organic carbon compounds. It is convenient to consider this group by itself, as by this time they form a large class, many of them being incorporated in the Pharmacopœia. It is impossible to include in this work all the drugs of this description which have been in use at one time or another. All that can be done will be to select the most prominent among them or those which have been in more general use.

These compounds are divided into (1) those belonging to fatty and (2) those belonging to aromatic series of chemical compounds. Compounds of the fatty series are derivatives of methane, whereas those of aromatic series are derivatives of benzene.

Fatty Series.—Compounds belonging to this series contain 2 elements – carbon and hydrogen, in various proportions and are mostly of vegetable origin, many being obtained by the destructive distillation and decomposition of organic matter. They have different boiling points—a fact which makes it possible to isolate them by careful fractional distillation. They are either gases, liquids or solids. They can all be volatilized without decomposition. They are colorless, usually with characteristic odour and of neutral reaction; soluble in alcohol, ether and carbon bisulphide, and insoluble in water. Compounds belonging to this series furnish many products which are used as animal food.

Aromatic Series.—Many compounds of this series are products of the vegetable kingdom, and a great number are obtained by destructive distillation. When coal tar is distilled and the distillate is carried over and caught in water, it separates into two layers. The upper one is light oil, from which benzene is obtained, and from the latter, or the lower one, carbolic acid.

Though it would have been more regular to arrange all these compounds under these two chemical divisions, it has nevertheless been decided to arrange them in the alphabetical order as being more convenient and useful.

Abrastol, Asaprol.—Obtained by the action of calcium carbonate on beta naphtol-alpha monosulphonate and by subsequent evaporation and crystallization. A whitish or slightly gray powder, without any odour and of a bitterish sweet taste, insoluble in ether, soluble in cold water (10 in 6) and in alcohol (1 in 2). Dose—10 to 30 grs.

Actions and uses.—Antiseptic, antirheumatic, analgesic and antipyretic. Given in acute and chronic rheumatism, in influenza with high temperature, in dental and intercostal neuralgia, in gout, anthrax and asthma, and in whooping cough and typhoid fever.

Acetanilidum, B.P.—Antifebrin—Acetanilide—Phenyl acetamide—Acetyl amido benzene. A derivative of aniline. To obtain it, heat together glacial acetic acid and aniline for several hours.

Characters.—Occurs in colourless shining lamellar crystals or a white powder, without any odour and of a slightly burning taste when put upon the tongue; when swallowed it gives a peculiar sensation in the mouth and in the throat, and a feeling of warmth at the epigastrium. It is neutral in reaction. Soluble in cold water (1 in 200), in boiling water (1 in 18), in alcohol (1 in 4), in ether (1 in 18), in brandy (1 in 20), freely so in benzol and chloroform; readily dissolved in sweet spirit of nitre and aromatic spirit of ammonia. Used as ointment (1 in 25), compressed tablets, *dusting* powder, or as solution suspended in water with tragacanth. Dose—1 to 3 grs.

Physiological action.—Antipyretic, diaphoretic, diuretic, analgesic, antiseptic, hypnotic, anti-epileptic, anti-arthritic and nervine tonic. It is a cerebral, vasomotor, and muscular stimulant. Generally it leaves no bad after-effects, but during the period of low temperature it sometimes has a tendency to produce collapse with chills, faintness, palpitation of the heart, and cyanosis. In moderate doses it checks chills and fever, lessens reflex excitability of the spinal cord, and quiets the nervous system. In large doses it acts on the blood, destroys its ozonizing functions, decolorizes the red corpuscles and forms methyl hæmoglobin. It also often leads to fatty degeneration of the heart, liver and kidneys. In action it resembles antipyrin and phenacetin. Of the three, antipyrin is the most dangerous; antifebrin comes next. As antipyretic, antifebrin takes the longest to produce its effect, but it is more permanent. Antipyrin is the most rapid in lowering the temperature, but its effect passes off rapidly. Phenacetin takes longer to produce this effect, which last longer than that of antipyrin. As analgesic antifebrin has a very feeble action. Antipyrin is the swiftest and surest in its results; phenacetin comes next.

Therapeutics.—As an anodyne or hypnotic it is given in acute rheumatism, in erysipelas of the head or face to relieve headache, alcoholic delirium, restlessness and insomnia in children, also the darting pains of locomotor ataxia, neuritis and neuralgic affections. It is best given with brandy in enteric fever, pneumonia, tuberculosis, &c. Externally, as an antiseptic soothing dressing, its ointment is applied to painful and obstinate rectal ulcers and to irritative skin affections. With unguentum hydrargyri it is used in psoriasis. As a dry dressing it may be dusted over burns, scalds, &c.

It may be useful in this connection to compare the physiological actions of some of the principal antipyretics that have been in use at one time or another. There are many, but some of them have been selected. These are divided into 3 classes:

1. Antipyrin, Kryofin and Phenacetin.
2. Anisic acid, Thallin, Kairin, Exalgin, Antithermin, Methacetin, Acetylamidophenol, and Resorcin.
3. Antifebrin, Formanilid or Methyl Formanilid and Pyrodin.

In all cases, medium doses have brought down the temperature one, two or three degrees.

Their action on the blood varies. The drugs of the first group caused the fixation of oxygen with hæmoglobin; those of the second produced intra-corpuscular methyl hæmoglobin; those of the third group produced the same changes, but when given repeatedly caused some destruction of blood corpuscles. It was further noticed that they did not produce much effect on healthy corpuscles,

that their effects were temporary and passed off soon; that in anæmic subjects, and in those with fever where the corpuscles had already been affected, they should be given in small doses. Antifebrin was the least desirable, phenacetin next to it, antipyrin the safest, as it never produced methyl hæmoglobin.

Acetone.—Acetonum—Acetyl-methylid—Di-methyl-ketone—Allied to methylic alcohol. Prepared by the dry distillation of wood, of acetates, of sugar or of any other carbo-hydrates with lime, or tartaric or citric acid. A transparent colourless liquid of a peculiar ethereal or mint-like odour and of a refreshing camphoraceous or sweet taste. Miscible with water, alcohol, ether, chloroform and oils. Used as a solvent of resins, fats, camphor, gun cotton and of cantharidin. Largely used in the manufacture of chloroform and in making spirone.

Acetopyrina—Antipyrinæ Aceto-salicylas.—Antipyretic, analgesic and sedative; given in hectic fever. In pulmonary tuberculosis it acts like a charm without interfering with digestion or the action of the heart. In rheumatism, sciatica, hemicrania, and influenza it is a suitable remedy. In bronchitis with cough and pain in the sternum it checks its further progress. Recommended as an unfailing remedy in gonorrhœa.

Acidum Aceticum Glaciale, B.P.—Glacial acetic acid—Concentrated acetic acid. Add to sodium acetate (from which water of crystallization is first expelled by heat), sulphuric acid and then distil. It contains 99 per cent. of hydrogen acetate. It is a clear colourless liquid of a strong vinegar odour and acid taste. Crystallizes when cooled to 59 F. Sp. gr. 1·058. Dose—2 to 5 ms.

Preparation.—Acidum Aceticum Empyreumaticum or Pyroligneous acid.

Acidum Aceticum, B.P.—Obtained by the destructive distillation of wood, especially of quercus alba, when among many volatile products acetic acid distils over mixed with other compounds. It is one of the products of the oxidation of ethylic alcohol. A clear colourless liquid, of a pungent odour and acid taste, miscible with water and alcohol. It contains 33 parts (by weight) of hydrogen acetate and 67 parts of water. Sp. gr. 1·044. Dose—5 to 15 ms.

Acid Aceticum Dilutum, B.P.—Diluted acetic acid contains 4·27 per cent. of hydrogen acetate. Sp. gr. 1·006. Dose—½ to 2 drs. given with water 1 ounce.

Preparations.—Acetum ipecacuanhæ and scillæ. Oxymel contains honey and acetic acid.

Physiological action.—Strong acetic acid and glacial acetic acid are escharotic and irritant of the stomach and intestines. Generally applied to warts, condylomata, corns, ringworm, pityriasis, carcinoma, &c. Freely diluted acetic acid is antipyretic, refrigerant, germicide, anthelmintic and hæmostatic. It allays thirst and restlessness; taken into the stomach it forms salts; in the blood it becomes oxidized, producing carbonic acid which increases the acidity of the urine. When used for a long time it impairs digestion, leads to emaciation and poverty of blood.

Therapeutics.—Its germicidal property is well known, being equal in efficacy to bichloride of mercury in solution of about 7 per cent. As a hæmostatic it is used in epistaxis. As an anthelmintic it is used as a rectal enema in destroying worms. Sometimes it is used in place of vinegar to sponge the whole body in high fever to reduce the surface heat.

Acidum Anisicum—Anisic acid—Methyl-para-oxybenzoic acid.—Obtained by the oxidation of para-cresyl methyl ether or of anethol or by heating methyl iodide with potassium para-oxybenzoate.

Anethol is found in oil of anise, fennel and tarragon.

A light, colourless, crystalline powder, slightly soluble in water, soluble in alcohol and ether. Dose—2 to 6 grs.

Actions and uses.—Antiseptic, antipyretic, and antineuralgic like salicylic acid. Given in rheumatism, fever, &c.

Acidum Boricum, B.P.—Boric acid, Boracic acid, Hydrogen-borate, Homberg's sedative salt. Found in solution in the water of hot volcanoes in Tuscany. Obtained by purification of native boric acid or by the interaction of sulphuric acid and borax. Colourless pearly lamellar crystals or irregular masses of crystals, unctuous to the touch, of a bitter and feebly acid taste, becoming sweetish after a time. Soluble in cold water (1 in 30), in glycerine (1 in 4), alcohol (1 in 30), boiling water (1 in 3). The alcohol solution burns with a green flame. It liquefies when heated and solidifies into a brittle glass-like mass on cooling. Dose—5 to 15 grs.

Preparations.—Boric dusting powder; lotio acidi borici (1 in 20 of hot water); solution and wash (10 grains to 1 ounce); suppositorium acidi borici. 3 grs. in each. Boric lint (1 to 2); boric wool (1 to 3); boric gauze contains 10 per cent. of boric acid impregnated with turpentine and alcohol. Boric salve mulls, Unguentum acidi borici—Boric acid ointment, B.P. (1 in 10). It contains paraffin ointment, white, 9, boric acid 1, and is used for wounds, abscess cavities, &c. Pulvis acidi borici compositus—boric acid 1, zinc oxide 3, and starch 6, for local application.

Glycerinum Acidi Borici, B.P.—Glyceritum boro-glycerin. Prepared by heating together boric acid and glycerine. A tough deliquescent mass, soluble in water and alcohol.

Solutio Saturans—Pigmentum Acid Borici.—Contains boric acid 1, ether 3, alcohol 6. Used in skin diseases as ringworm, &c.

Borolyptol.—Said to contain aceto-boro-glyceride 5 per cent., formaldehyde 2 per cent. with active constituents of pinus pumilio, eucalyptus, myrrh, storax and benzoin. Dose—1 to 2 drs. as an intestinal antiseptic.

Euthymol and Euphormol are said to contain boric acid, thymol, menthol, oil of eucalyptus, &c.

Borsalyl.—A dry powder, obtained by the interaction of boric acid 25 and sodium salicylate 32 in the presence of water. Used as an antiseptic.

Thiersch's antiseptic solution contains boric acid 12, salicylic acid 2 and water 1,000. Used as an antiseptic in surgery.

Borine, a proprietary preparation, composed of boracic acid mixed with the active constituents of benzoin, witch hazelnut, winter green, meadow sweet, golden rod and also combined with the stearoptenes of wild thyme, eucalyptus and peppermint.

Used locally (1 to 4 of water) as a general disinfectant and antiseptic. Internally to remove fœtid breath, fœtid urine, fœtid stools. Dose—1 to 2 drs.

Physiological action.—Boracic acid is a non-irritant disinfectant, antiseptic and deodorant. It arrests fermentation and putrefaction and is destructive to low organisms. It arrests the activity of bacteria in solution (1 in 133). *Therapeutics.*—Used as a paint for enlarged tonsils; as a pigment consisting of boric acid, potassium chlorate, limejuice and glycerine in typhoid fever, for sordes on the teeth and dried lips. As a gargle, boric acid with tannic acid or alum and glycerine is used in pharyngitis and relaxed sore throat. As a dusting powder mixed with starch or Fowler's earth, or as insufflation it is used in

intertrigo, erythema, &c. It destroys the odour of fœtid and foul sores and the fœtor from the axilla or feet during perspiration. The ointment is used in suppurating sores, chronic otitis, also for burns, scalds, eczema, chaps on hands and breasts, and in pruritus. It is given internally in cystitis, with ammonical urine containing flakes of mucus and attended with much scalding. It is a useful ingredient in tooth powders. Glycerinum Acidi Borici, equivalent of Boro-glyceride, is a powerful antiseptic and is used as an injection (1 in 40) in otorrhœa and ophthalmia. Internally it is given in pills or solution with althœa in coughs.

Acidum Cacodylicum and its salts—Sodium Cacodylate. Very useful in chronic fevers. Dose—1 to 2 grs. Magnesium Cacodylate—Used as sub-cutaneous injection. It is more freely soluble and contains free arsenic 48 per cent. It produces no secondary effects, hence preferred to sodium cacodylate. Hydrargyrum Cacodylate.—This preparation is highly poisonous. Its injection causes induration and intense pain. A preparation of iodide of mercury and sodium cacodylate is substituted for it in neurasthenia and in secondary or tertiary syphilis. Guaiacol Cacodylate.—It readily splits up into cacodylic acid and guaiacol. A preparation containing sterilized oil, cacodylic acid gr. ½ and guaiacol gr. ½ Is used as injection in tuberculosis.

Actions and uses.—Cacodylic acid and its salts stimulate the process of nutrition and increase the products of secretion ; hence useful in diseases due to defective nutrition as tuberculosis, scrofula, gout, malaria, neurasthenia, asthma, &c.

Acidum Carbolicum, B.P.—Carbolic Acid. Phenol.—Phenic Acid, Phenylic Acid, Phenyl Alcohol, Phenyl Hydrate. It occurs in the urine of man and herbivorous animals and in castorium, and is a product of the dry distillation of organic substances, such as bones, wood, coal and resin. It is also synthetically prepared in a very pure state from benzene and from aniline oil. It is colorless, having a tendency to become pink or brown or reddish. Met with in loose needle-shaped crystals of an aromatic odour and burning sweetish taste. Soluble in water (1 in 30), but freely so in alcohol, ether, chloroform, benzol, carbon bisulphide, glycerine, in fixed and volatile oils, fats and melted resins, in vaseline (1 in 20), and almost insoluble in benzin. It coagulates albumen and collodion. It does not redden blue litmus paper. If exposed to damp air for some time, it becomes red. By concentrated sulphuric acid it becomes converted into sulpho-carbolic acid, and by nitric acid into various substitution products, such as picric acid at an ordinary temperature. On the addition of 10 parts of water it liquefies ; with 12 parts of water it becomes a turbid liquid ; with 30 to 40 it forms a clear solution. It is suitable for an application as a caustic. Dose—1 to 3 grs.

Acidum Carbolicum Crudum—Crude Carbolic Acid.—It contains cresol (cresylic acid), xylic acid and phenol. Occurs in crystalline masses. Diluted with water it is used as a household disinfectant for drains, water closets, urinals, &c.

Acidum Carbolicum Liquefactum, B.P.—Liquefied Phenol (1 of water to 10 of phenol). Dose—1 to 3 ms.

Carbolic acid gauze—Carbasus acidi carbolici, cotton gauze medicated with half its weight of—phenol 1, resin 4, and paraffin 4. Carbolic oil (Lund's oil), used for oiling catheters, contains phenol 1, castor oil 4, and olive oil 11. Carbolized plaster contains carbolic acid 25, shellac 75, coated with guttapercha and dissolved in carbon bisulphide. Carbolized silk ligature contains carbolic

acid 1 and melted yellow wax 9. Carbolized tow—tow impregnated with tar containing 10 per cent. of phenol. Carbolized wool contains phenol 6 per cent. Carbolic acid salve mulls spread with lead plaster and phenol. Carbolic oiled silk protective—oiled silk coated on both sides with copal varnish and dried, then brushed over with dextrine 1, starch 2, and phenol lotion (1 in 20) 16.

Gargarisma Acidi Carbolici.—2 grains to 1 oz. of water. For sore throat with fœtid breath. Glycerinum Acidi Carbolici, B.P. (1 in 5).—Mixed with water used as a mouth-wash for fœtid breath and in diptheria. Internally given in pertussis. Dose—5 to 10 ms. Vapor acidi carbolici—20 grains in a pint of hot water. Useful as inhalation in pertussis, bronchitits with profuse expectoration and in gangrenous lungs. Carbolic acid wash or spray.—Acid carbolic 1 grain to 4 ozs. of water. Injectio Acidi Carbolici Hypodermica—1 grain of the acid to 30 drops of water. Carbolized iodine solution contains carbolic acid 22 grains, iodine 3 grains, water 10 ounces. Given internally in Asiatic cholera and used locally as a gargle, inhalation or paint in diptheria and as a douche in ozæna. Carbolic acid lotion—Phenol lotion.—5 grains to 1 ounce of water. Preventive against mosquito bites. It relieves pain and itching from bites over the face and hands. Mistura Acidi Carbolici—Carbolic acid 1½ ms., tincture of iodine 2 ms. and water 1 ounce, given in typhoid fever. Dose—1 oz.

Trochiscus Acidi Carbolici, B.P.—1 gr. in each with tolu basis. Used as antiseptic and stimulant. Liquor Sodii Carbolatis, Liquor Sodii Phenatis.—Contains phenol 8, caustic soda 4, distilled water 100, antiseptic and anæsthetic. Pigmentum antisepticum contains glycerinum acidi carbolici, 1 ounce, quinine hydrochloride ½ drachm, mercuric chloride $\frac{1}{1000}$ grains. Used as an application to the nasal passages in hay fever. Pastillus Acidi Carbolici.—Carbolic acid ½ grain in each pastil. It is antiseptic and stimulant, used in sore throat and for preparing carbolic acid lotion. Perles or globules of carbolic acid contain 1 grain of phenol in each. Dose—1 or 2. Pilula Acidi Carbolici—Phenol 2, powdered liquorice 1, powdered althæa 1. Dose—2 to 4 grs. Given for flatulence in diarrhœa and as an antipyretic. Smelling salt carbolized. Phenol 24, ammonium carbonate 16, strong solution of ammonia 44, oil of lavender 1½, camphor 3, pine saw dust q.s. Used as inhalation for coryza, hay fever, influenza, &c. Soloids of carbolic acid 20 grains each; convenient for preparing carbolic lotion, one saloid to a pint of water. Suppositora Acidi Carbolici, B.P.—Contains phenol 1, bees wax 2, oil of theobroma 12 in each.

Unguentum Acidi Carbolici, B.P.—Ointment of carbolic acid.—Phenol 1, dissolved in glycerine 3 and paraffin ointment (white) 21; used in parasitic skin-diseases. Camphorated carbolic acid contains phenol 12, camphor 4, water 1. It is a liquid at ordinary temperature, soluble in alcohol, ether, chloroform and oils, insoluble in water or glycerine. Used as local anæsthetic for toothache, as a germicide dressing for wounds, as a pigment in diptheria and to ulcer of the os and cervix uteri, and to abort boils, and as an injection in uterine catarrh. A saturated solution of camphor 3, with phenol 1. 10 ms. dose is used as an intra-pulmonary injection in phthisis without causing any irritation. Carbolic colloid—Contains carbolic acid 20 grs., styptic colloid 1 ounce. Soluble in anhydrous ether. As a local anæsthetic it gives relief in toothache and is used for minor operations. Phenol Iodatum—Iodized phenol (1 to 4). Used as intra-uterine medication and for ringworm of the scalp. Phenol sodique contains 8 per cent. of phenol in combination with caustic soda. Used as an antiseptic and as an anæsthetic, but is less caustic. Pheno-resorcin contains

carbolic acid 67, resorcin 33 and water 10. Pheno-salyl.—A mixture of carbolic, salicylic and benzoic acids, melted together and dissolved in lactic acid. A clear syrupy liquid, of a pleasant odour, very soluble in water. Solution 1 per cent. is used locally as an antiseptic.

Physiological action.—Antiseptic, antipyretic, local anæsthetic, anodyne, deodorant and caustic. It is a depressant of the heart, brain, spinal cord and lungs. It destroys low forms of life and all organized ferments, both animal and vegetable.

A weak solution; if applied to the skin, acts as an anæsthetic; in a concentrated form it coagulates albumen and hence acts as a caustic, but does not vesicate; it forms a scar or slough. Internally, given in large doses and in a concentrated form it acts as a corrosive to the mucous membranes, producing speedy narcosis. If swallowed, it produces white, painful, superficial eschars in the mouth, throat and stomach. In small doses and if much diluted it acts as an internal antiseptic. Gastric juices convert it into sulpho-carbolate. In toxic doses it paralyses the vasometor centre in the medulla. The heart becomes slow and depressed. Respiration is accelerated at first, but soon becomes slow and ultimately paralyzed. Convulsions set in followed by paralysis of both motion and sensation, stupor, deep coma, contracted pupils and death. Carbolic acid becomes rapidly absorbed and is rapidly diffused. Vaginal injections have often produced severe constitutional symptoms. Under its use urine becomes greenish or black, and there is odour of phenol in the breath and in the urine.

Therapeutics.—Locally it relieves itching in pruritus of any form. It effectively destroys the fungus of tinea tonsurans, and has a stimulating action on indolent ulcers, aphthous stomatitis, &c. As an antiseptic and anæsthetic its solution is used as a gargle for painful sore throat of diptheria and in tonsillitis attended with fœtid breath. Carbolic dressings are very useful for burns to relieve the pain. In ingrowing of nails, its solution has a marked anæsthetic effect. In deep-seated inflammations, in glandular swellings, inflamed bursæ, hydrocele, buboes, &c., a 2 per cent. solution is injected with much success. In tuberculosis, malaria, erysipelas, phthisis, &c., a solution of carbolic acid with pilocarpine salt has proved successful. As a germicide and as a spray or inhalation a 2 per cent. solution with ammonia water and alcohol is used in diptheria, whooping cough, laryngeal and pulmonary catarrhs, &c.

Internally it is given in flatulence, dyspepsia and vomiting—in various zymotic diseases as typhoid, malarial and other fevers and in diabetes. In obstinate malarial fevers it is hypodermically injected with quinine. Sulpho-carbolates of sodium, potassium and lithium have been used in septic diseases as diptheria, puerperal fevers, &c.

Acidum Chloraceticum—Chloracetic Acid.—A chlorine compound of acetic acid. It is met with in deliquescent white crystals, generally liquefied. It is escharotic and blisters the skin when locally applied.

Acidum Trichlor-Aceticum—Trichlor-Acetic Acid.—To obtain it, mix chloral hydrate 1 part and nitric acid 3 parts. To oxidize, expose to the sun's light and finally distil. Occurs as deliquescent, colourless rhomboidal crystals of a pungent odour, soluble in water, alcohol and ether.

Preparation.—Aceto-caustin, a fine caustic, contains 50 per cent. of the solution of trichlor acetic acid. Paste—trichlor acetic acid 1, glycerine 3, iodine 3 and potassium iodide 3.

Actions and uses.—Local astringent, hæmostatic, antiseptic and escharotic. The paste when applied forms an ivy-coloured eschar, less painful than nitrate of silver, chloride of zinc or caustic potash, and used in venereal sores, warts, condylomata, lupus and in ulcerative diseases of the nose and throat; also in pharyngitis, tonsillitis, &c. Its action being localised and more persistent, it is better borne than chromic acid.

Acid Cinnamicum—Cinnamic Acid—Cinnamylic Acid.—To obtain it, saponify with potash, balsam of Peru or tolu, balsam storax or benzoin. Balsams contain about 40 per cent. Occurs in white scales or transparent micaceous crystals, sparingly soluble in water, freely soluble in alcohol and ether.

Preparation.—A 5 per cent. oily emulsion with yolk of egg to which an alkali is added. Used for intravenous injection. Dose—2 to 5 ms.

Actions and uses.—Antitubercular and antiseptic. The injection is used in tuberculosis, phthisis, lupus, &c.

Acidum Citricum, B.P.—Citric—Acid—Hydrogen Citrate. An organic acid found in juice of the fruits of various species of citrus, strawberry, raspberry, cherry, currant, gooseberry, lime, lemon, tamarind, tomato, &c. To obtain it, saturate the juice of various species of citrus with chalk and boil the precipitate of calcium citrate with dilute sulphuric acid; met with in large colourless rhombic prisms, without any odour, and of an agreeable acid taste. Efflorescent in warm air, deliquescent in moist air. Soluble in cold water (4 in 3), in hot water (2 in 1), less soluble in alcohol, slightly soluble in ether. Dose—5 to 20 grs.

Lime juice contains it from 7 to 10 per cent.; tamarind contains it from 4 to 6 per cent.

Preparation.—Syrupus acidi citrici 1 per cent. Dose—1 to 4 drs.

Actions and uses.—Antiscorbutic, stimulant, diuretic and refrigerant; given in rheumatism, jaundice, scurvy, fevers, and as an antidote to narcotic and alkaline poison. Given for a long time it reduces obesity. Locally used as an application in diptheritic angina, gangrenous sore mouth, pruritus, cancerous growth, &c.

Acidum Cresoticum—Para-cresotic Acid.—An homologue of salicylic acid, found as an impurity in artificially prepared salicylic acid It is obtained from cresol. In white needles almost insoluble in water—soluble in alcohol, ether and chloroform. Dose—as an antipyretic 2 to 10 grs; as an antiseptic ½ to 1 grain in children.

Actions and uses.—Antipyretic and antiseptic, inferior to salicylic acid; given to children in intestinal catarrh and fever.

Acidum Cresylicum—**Cresolum Crudum**—Cresol, methyl phenol, meta cresol, kresylol. A coal-tar product containing three isomeric cresols., *vis.*, ortho, meta, and para-cresols. Crude carbolic acid contains 90 per cent. of cresol. A colourless or slightly yellow liquid of a creosote-like odour, soluble in water (1 in 80), freely so in alcohol, ether, glycerin and olive oil.

Preparation.—Cresol salicylas.

Actions and uses.—Antiseptic and germicide, superior to carbolic acid, but much less poisonous. The solution is used as inhalation in whooping cough. It is slightly caustic.

Acidum Iodo Salicylicum.—A compound of iodine and salicylic acid in which one atom of hydrogen is replaced by iodine. A white crystalline powder, slightly soluble in water, insoluble in alcohol, ether, fixed oils and in collodion. Dose—20 to 40 grs. Used as cachets.

Actions and uses.—Analgesic and antipyretic; having the combined action of iodine and salicylic acid. Given in fevers, rheumatism, gout, neuralgia, and in cases where salicylates have failed.

Di-Iodo Salicylic Acid.—A compound of iodine and salicylic acid in which 2 atoms of hydrogen are replaced by iodine; it is richer in iodine, and used in acute articular rheumatism.

Acidum Glyconicum.—An oxidation product of cane sugar. It is generally neutralized with sodium carbonate. Given per rectum as a clyster or introduced into the os. Dose—1 to 20 grs.

Highly recommended in diabetic coma with dyspepsia.

Acidum Lacticum, B. P.—Lactic acid. It exists in the stomach as a product of food, in the gastric and intestinal juices, in the urine, in many plant juices as sour cabbage, sour milk, &c. It is, however, artificially prepared from milk sugar or grape sugar by a peculiar lactic acid (bacterium lactis) fermentation. On a large scale it is prepared from flour (wheat or rice) or from starch when treated with sulphuric acid. The starch is thus converted into glucose, to this sour milk is added to produce fermentation.

A colourless syrupy liquid of a sour taste, without any odour and acid reaction; miscible in all proportions with water, alcohol and ether, nearly insoluble in chloroform. It contains 75 per cent. of hydrogen lactate and 25 per cent. of water. With potassium permanganate it gives out the odour of aldehyde. It coagulates milk and albumen. Dose of the strong acid 5 to 20 ms. should be given well diluted.

Used as a nebula or spray (1 in 16) of water, as a paint 50 to 80 per cent.

Preparation.—Acidum Lacticum Dilutum—(3 in 20) of water. Dose—½ to 1 dr.

Quinine Lactas.—A white powder soluble in water. Used in 1 per cent. solution as injection for gonorrhœa. Dose—1 to 5 grs.

Syrupus Calcii Lactophosphatis, B.P. Dose—½ to 1 dr. Syrupus calcii et ferri lactophosphatum contains 1 grain of lactate of iron to each drachm. Dose—½ to 1 dr.

Actions and uses.—In a pure state, escharotic. Well diluted, given in large doses it is a gastric irritant; in small doses digestive, galactagogue and astringent; hence given in dyspepsia, infantile diarrhœa dependent upon deficient secretions. As a sedative of the mucous membranes it is given in intestinal and vesical catarrh, oxaluria, in lithic acid and phosphatic diatheses; in diabetes with imperfect digestion and in phthisis to allay cough and quench thirst. In chronic cystitis it checks the ammoniacal decomposition of the urine. In a concentrated form its principal use is as a paint for lupus, epithelioma, other morbid growths and intractable ulcers. As a nebula or spray for dissolving false membrane, in diptheria, croup and other laryngeal and pharyngeal inflammatory affections.

Acidum Oxy-naphthoicum.—A derivative of naphthol. A white colourless or yellowish powder, without any odour, freely soluble in glycerin, ether, chloroform, fatty oils and alkaline solutions; insoluble in water. Dose—1 o 3 grs. Its antiparasitic, antizymotic and antiseptic properties are 5 times greater than those of salicylic acid. Internally it is given in intestinal catarrh; as a sternutatory it is used in coryza, and as an antiseptic in venereal ulcers, scabies, prurigo, &c.

Acidum Oleicum, B.P.—Oleic Acid—Hydrogen Oleate.—To obtain it, add caustic potash to almond oil or to olive oil and boil. To the resulting potassium

oleate add hydrochloric or tartaric acid and water, and apply heat. Another method—Apply very hot steam upon fats and press the liquid, when oleic acid will be separated from the solid fatty acids. Acidum Oleicum Purificatum.—To obtain it, heat the impure oleic acid with litharge, when oleate, palmitate and stearate of lead are formed; to this add ether or benzin, when pure oleate is separated; treat it with hydrochloric acid, when oleic acid is separated; the residue left is used in the manufacture of stearine candles.

Oleic acid is a limpid straw-coloured oily liquid of a peculiar rancid odour and slightly acid taste. It becomes brown when exposed to the air and is faintly acid to test paper. It is insoluble in water, readily soluble in alcohol, fixed and volatile oils, benzol, benzin, turpentine, chloroform or ether. It is readily absorbed by the skin and hence promotes the absorption of the drugs with which it is combined. When mixed with the drugs it does not form with them pure chemical compounds, but dissolves metallic oxides and forms indefinite oleic solution of oleates in an excess of oleic acid. Oleates of bismuth, copper, lead, mercury and zinc form medicinal solutions which are also soluble in oils, fats, and petroleum. Oleic acid also dissolves alkaloids as aconitine, morphine, veratrine, atropine but not their salts, thus forming oleates.

Actions and uses.—Soothing, emollient, readily absorbed by the skin without any irritation, hence used as a solvent when drugs are to be introduced into the system through inunction.

Acidum Oxalicum—Oxalic acid.—Found in many plants as oxalis, rumex, rheum, &c.; in the urine as acid calcium oxalate, and can be made from organic substances as fat, sugar, starch, &c. To obtain it, oxidize organic substances with nitric acid, or heat saw-dust with potash or soda. To the heated product (potassium or sodium oxalate) add calcium hydroxide, when the decomposed product, calcium oxalate, is left behind. To this add sulphuric or hydrochloric acid, when oxalic acid is separated. Occurs in large, transparent, colourless crystals, soluble in water and alcohol. Dose—½ to ¼ gr.

Actions and uses.—Highly poisonous, emmenagogue; given in amenorrhœa.

Acidum Phenylaceticum—Phenyl acetic acid—Alphatoluic acid.—A coal-tar product in white micaceous crystals, of sour aromatic taste, persistent odour resembling that of perspiration of horses; of acid reaction, soluble in alcohol (1 in 1), in oil (1 in 20). Dose—1 to 3 grains.

Used as alcoholic solution (1 in 6), best given with cod liver oil. Dose—10 to 20 ms.

Actions and uses.—Antitubercular, antiseptic and disinfectant; given in tuberculosis. It diminishes cough and expectoration. The patient gains in weight, strength and colour.

Acidum Phenyl Propionicum—Phenyl propionic acid—Hydrocinnamic acid—Homotoluic acid.—A coal-tar product. In acicular crystals of a reddish-white colour. Insoluble in water, soluble in alcohol (1 in 1) and in oils (1 in 6). Taste and odour similar to that of phenyl acetic acid. Dose—1 to 3 grs.

2. Used as solution (1 in 6) freely diluted.

Actions and uses.—Antitubercular and disinfectant. It acts upon the virus of tuberculosis and hence given in phthisis with cavities combined with cod-liver oil.

Acidum Picricum—Carbazotic acid—Trinitrophenic acid—Trinitrophenol Prepared by the action of nitric acid on carbolic acid. Yellow crystals, intensely bitter, soluble in water (1 in 95), in rectified spirit (1 in 16), freely soluble

in alcohol, chloroform, ether and benzene. Dose—½ to 2 grains. Used as ointment, injection, &c. Liquor acidi picrici (1 per cent.) solution. Dose—½ to 3 drachms.

Actions and uses.—It is painted on the skin in erysipelas, lymphangitis of the leg and thigh, and in eczema. Cotton wool saturated with picric acid is applied in burns. It colours the skin, the conjunctivæ and the urine yellow. The ointment, 1 to 3 per cent. is recommended for pruritus of the scrotum. An injection is used in acute gonorrhœa and ozæna. Internally as an antiperiodic and anthelmintic, ammonium picrate is given in place of quinine in malarial fevers, neuralgia, also in albuminuria and headache.

Acidum Pyrogallicum—Pyrogallic acid—Pyrogallol—Dioxy-phenic acid—Trihydroxybenzene.—A tri-atomic phenol prepared from gallic or tannic acid by heat or dry distillation. In light and flaky crystals, white laminæ or fine needles, darkening on exposure to the air, without any odour or taste; on the tongue it produces a sensation of coolness. Soluble in water (1 in 2½), in melted lard (1 in 10), freely soluble in alcohol and ether. It has great affinity for oxygen and possesses antiseptic properties. It darkens the skin and hair. Dose—½ to 1½ grain. Used as solution 2 per cent., pills and syrup.

Preparations.—Pyrogallol acetate.—It minimizes the irritant action of pyrogallol by acting upon the skin whilst slowly giving out pyrogallol. Unguentum acidi pyrogallici or Jarisch's ointment (1 to 8). Used for psoriasis. Unguentum pyrogallol compositum: pyrogallol 5, salicylic acid 2, ichthyol 5, vaseline 88.

Physiological action.—Powerful antiseptic and hæmostatic. A virulent poison. Introduced into the stomach it is rapidly absorbed and gives rise to vomiting, diarrhœa, rigors, and death; absorbed into the blood it gives rise to a large amount of globulin and to disorganization of blood corpuscles. It has a great affinity for oxygen and hence used as an antiseptic and disinfectant.

Therapeutics.—With ergotine it is given in hæmoptysis and menorrhagia. Its solution, 20 per cent., mixed with collodion, or its ointment, 10 to 20 per cent., is applied in chronic eczema, psoriasis, lupus and epithelioma. It should be used with caution, as it is apt to cause toxic symptoms. A 2 per cent. solution is used as a wash for phagedenic chancres. Its application darkens the skin and hair. As a hair-dye it is used with nitrate of silver for blackening the hairs.

Acidum Salicylicum, B.P.—Salicylic acid—Ortho-oxybenzoic acid.—An organic acid. A derivative of salicin by double oxidation; probably also a substitution derivative of benzene; formed by replacing 2 atoms of hydrogen, one by hydroxyl, and the other by carboxyl.

Artificial acid.—It is synthetically prepared by combining the elements of carbolic acid and those of carbonic acid together as by heating carbolic acid with caustic soda, and by passing carbonic anhydride gas through the liquid and purifying. Natural acid is prepared from the oils of winter green or tea berry, sweet birch, andromeda leschnaultii, or from salicin by heating it with caustic potash and treating it with hydrochloric acid. 138 grs. of salicylic acid are contained in 160 grs. of oil of gaultheria.

Artificial acid is in white needle-shaped crystals similar to quinine. Its dust irritates the nostrils. It is of a sweetish taste. Soluble in water (1 in 500), more freely in water containing borax 8 per cent., in spirit (1 in 3), in ether (1 in 2), in olive oil (1 in 20), in glycerine (1 in 200); freely soluble in melted fats and vaseline.

With solutions of sodium phosphate, ammonium citrate, ammonium acetate and potassium acetate salicylic acid forms salicilates of the bases, and sets free other acids. Dose—5 to 20 grs. in cachets.

Natural acid is purer than the artificial acid and is free from cresotic acids. It occurs in needle-shaped crystals like those of strychnina, but the crystals are smaller in the artificial acid. Dose—5 to 20 grs.

Salicylic acid is used for surgical dressings. These include salicylic lint 4 per cent., salicylic wool 5 to 10 per cent., salicylic gauze 4 per cent., salicylated isinglass plaster. Granular effervescent salicylic acid (1 in 12). Dose—1 dr. Pulvis salicylicus cum talco contains salicylic acid 3, starch 10, and talc 87. A fine powder used to check fœtid perspirations of the feet. Salicylic plaster (mulls) ½ gr. of salicylic acid to every square inch combined with creosote; used to destroy thick skin. Salicylic collodion contains salicylic acid 1, flexible collodion 5. Used as a pigment for lupus. With extract of cannabis it is applied to corns. Salicylated camphor—Camphora salicylata. To obtain it, heat together camphor 84 and salicylic acid 65 parts. The solution crystallizes on cooling. It is an unctuous powder, but liquefies when rubbed on the skin. Slightly soluble in water or glycerine, in fats or oils (1 in 20). It is decomposed by hot alkaline solution. Used as an antiseptic dressing or ointment in lupus and rodent ulcers.

Unguentum acidi salicylici, B.P.—Salicylic acid 2, paraffin ointment (white) 98.

Salicylic cream contains salicylic acid 2, carbolic acid 1, glycerin 10. Used as an antiseptic dressing for irritated skin due to discharge from sores or wounds.

Physiological action.—Antiseptic, antiperiodic and antipyretic. Large doses act as direct poison on the heart and respiration. Taken internally it undergoes destructive changes and is eliminated in the urine in its original form and also as salicyluric acid. It resists decomposition, prevents fermentation and putrefactive processes. Internally it is very similar in action to quinine, even causing ringing in the ears. *Therapeutic uses.*—It is useful in phlegmasia dolens and in gonorrhœal epididymitis. It gives a marked relief in dysmenorrhœa, in painful neuritis whether of a specific or rheumatic nature. Externally it is useful in ulcers, granulating sores, &c. Like iodoform it is used as a plug in metrorrhagia. An ointment, containing salicylic and carbolic acid (1 in 16) each, is used as a dressing in cancerous affections, in soft chancres, buboes, also in eczema, psoriasis and ringworm. Locally its solution gives relief to swollen painful joints. As a gargle and mouth-wash its solution is used in diphtheria. It is three times as powerful as carbolic acid in preventing fermentation, but is less irritating.

Acidum Sulphanilicum.—Occurs in small white crystals, sparingly soluble in water. With sodium in forms sodii sulphanilas. In white shining scales, soluble in water. Dose—5 to 15 grs. Given in iodism, acute catarrh, otitis and laryngitis.

Acidum Tartaricum, B.P.—Tartaric acid—Dextro rotatory hydrogen tartrate. Dihydroxy-succinic acid.—It is found in vegetables and fruits either as free acid or in combination as potassium tartrate and calcium tartrate. Grapes contain most of the acid in the form of acid tartrate, crude tartar or argol. To prepare it, add to the free acid potassium tartrate, chalk, or calcium chloride, when calcium tartrate is formed; to this add sulphuric acid to decompose it, when tartaric acid is set free. Evaporate the solution and crystallize.

Colorless, transparent prisms or a white powder without any odour and of an acid taste, soluble in water (1 in 0·8) and in alcohol (1 in 2·5). Dose—5 to 20 grs.

Actions and uses.—Refrigerant, used in fevers to allay thirst. In pharyngitis, pulmonary catarrh mixed with sugar it is given to moisten the throat. In

diphtheria it is used as a paint to dissolve the false membranes. In fœtor of the feet it is applied to correct the foul odour.

Remarks.—Owing to its cheapness it is used more frequently instead of citric acid.

Actol—Argenti Lactas.—A white powder without any odour, taste very faint, soluble in water (1 in 15). It coagulates albumin and forms soluble compounds with the juices of the tissues of the body or with the secretions of wounds, and thus permeates the tissues and extends its action to some distance from the surface. Used as solution (1 in 1,000) it destroys pathogenic microbes. It lessens putrefaction in the bowels and leads to constipation. Its solution is used to destroy pathogenic microbes, and hence used as gargle or mouth wash in putrid sore throat, aphthœ, &c.

Adhesol.—A compound preparation consisting of copal resin 35, gum benzoin 3, balsam tolu 3, ether 100, oil of thyme 2, B. naphthol 3. Used as a local anodyne and antiseptic dressing for superficial, inflamed and painful wounds. It evaporates rapidly, leaving a fine film.

Æther—Ether, B.P.—Sulphuric ether—Ethyl oxide.—Ethers are obtained from alcohol by replacing the hydrogen of hydroxyl by the same or other alcohol radicals. The strongest ether contains pure ether with 4 per cent. of alcohol and some water. Æther sulphuricus, ethyl ether or ordinary ether contains 92 per cent. by volume of ethyl oxide, the remainder being pure alcohol. It is obtained by the action of sulphuric acid on ethylic alcohol and distilling together. Sp. gr. 0·735.

A colourless heavy and highly volatile liquid, vapour very inflammable. It has a burning sweet but pungent taste and characteristic odour; soluble in water (1 in 10), miscible in all proportions with alcohol chloroform, fixed and volatile oils; it is a solvent of resins, balsams, and most of the organic alkaloids. It evaporates speedily on exposure to the air, producing intense cold. It has a solvent action on sebaceous secretions; hence used as a vehicle for skin medication. It dissolves freely hydrargyrum bichloride, hydrargyrum iodidum rubrum, iodine and bromine. It sparingly dissolves sulphur and phosphorus. It does not dissolve potash or soda. Generally used for medicinal purposes. Dose—10 to 30 ms.; for a single dose to 60 ms. For hypodermic injection, 20 to 40 ms., generally combined with strychnine and digitalis.

Æther Purificatus, B.P.—Purified ether. Sp. gr. 0·722 to 0·720. Ether, freed from most of the ethylic alcohol and water, best suited for general and local anæsthesia. Methylated absolute ether is also prepared from methylated alcohol. When purified and re-distilled, it may be used for local anæsthesia only. If again washed and re-distilled it is free from methylic ether and is then known as rectified ether and used for producing general anæsthesia. Preparations of ether—Spiritus Ætheris Compositus, B.P.—Compound spirit of ether. Hoffmann's anodyne, containing ether 5½, alcohol 78 and sulphuric acid 36; water 1½ with sodium bicarbonate to neutralize the liquid; given in gastralgia, colic, flatulence, hysteria and in tropical diarrhœa. Dose—20 to 40 ms.; for a single dose 60 to 90 ms.

A. C. E. Mixture (Bryant's anæsthetic) contains alcohol 1, chloroform 2, ether 3. It is safer than chloroform, quicker in action than ether. Hence used in midwifery practice.

Æther Phosphoratus—Ethereal tincture of phosphorus contains phosphorus 4, purified ether 200. Dose—1 to 10 ms. in neuralgia.

Spiritus Ætheris, B.P.—Spirit of ether, contains ether 10, alcohol 20. Dose—20 to 40 ms., for a single dose 60 to 90 ms.

Compound anæsthetic ether contains amyl hydride 1, rectified ether 4; used as an anæsthetic.

Hydramyl ether—Contains amyl hydride and absolute ether equal parts; used for local and general anæsthesia.

Oleum Æthereum—Ethereal oil. Transparent, nearly colourless volatile liquid of a peculiar aromatic ethereal odour and pungent bitter taste, very inflammable, less pleasant for inhalation, contains equal volumes of heavy oil of wine and ether.

Æthereal Oxygen.—A mixture of ether vapour and oxygen; produced by adding potassium permanganate to ozonic ether in an inhaler. Used as an inhalation in whooping cough, asthma, &c.

Physiological action.—Stimulant of the brain, heart and of the motor and sensory nerves, a vaso dilator, also anodyne, hypnotic, sudorific and antispasmodic. Externally, a powerful refrigerant. Its vapour, if applied to the skin and not allowed to evaporate, acts as a rubefacient, irritant and vesicant; it is slower in action than chloroform and less protracted or more evanescent than alcohol, ammonia, valerian, brandy, &c. As an anæsthetic it is largely used for inhalation. It is occasionally used in India, where chloroform is in universal use. As ether is supposed to decompose in a few hours in hot climate, its vapour as an inhalation is more irritant than chloroform. It produces irritation of the fauces, a sense of strangulation and cough, often broncho-pneumonia.

As cardial and vasomotor stimulant it raises the blood pressure. The face is flushed, the pulse becomes frequent and respirations are increased. Tetanic convulsions with slight cyanosis, rigidity of muscles and stertor follow. In a short time complete insensibility with relaxation of the muscles and suspension of the brain functions result. The respiration and circulation being only carried on by the lower centres in the medulla. If the inhalation be still continued, there is paralysis of respiration, and finally the heart beats disappear. If the inhalation be now discontinued, narcosis subsides and vomiting gives relief. Ether inhalation is better suited in organic cardiac diseases than chloroform. It does not clot the blood. It is slower in action, the stage of excitement is longer, narcosis less profound and vomiting less severe than in chloroform inhalation. As an anæsthetic it should be avoided in fatty degeneration or dilatation of the heart, renal or pulmonary diseases, fainting fits, enlarged tonsils, tumour in the brain, diabetes mellitus and chronic alcoholism. It is not suitable for children and old people in whom there is a tendency for pulmonary affections, in abdominal operations for intestinal obstructions and in reducing dislocations.

Therapeutics.—Its vapour may be safely employed in neuralgia, cancer, convulsions, tetanus, hysteria, epilepsy, whooping cough, laryngismus stridulus, asthma, &c. It is an usual ingredient of stimulant mixtures. It relieves abdominal discomfort and pain of tympanitis; stimulates the salivary and pancreatic secretions, and assists digestion of fatty matters: hence frequently given in combination with cod-liver oil. As an antispasmodic it is given in hysteria to relieve the paroxysm. As an anodyne in hepatic colic it is given with turpentine. It is injected hypodermically either alone or combined with strychnine and digitalis, in cases of collapse due to cholera or sudden cardiac depression; in asthenic conditions of the system as in adynamia of pneumonia, eruptive or typhoid fevers, in puerperal state and in thrombosis of large vessels. It is used as a spray in various forms of neuralgia as sciatica, lumbago, chorea, &c., and for minor surgical operations, such as tooth-extraction, reduction of hernia, &c. To avoid unpleasant after-effects of inhalation, inject hypodermically morphine and atropine, and give nitrous

oxide gas before the inhalation of ether. In cases of poisoning by the inhalation of ether where the respiration becomes paralysed and there is stertor with cyanosed face, &c., to resuscitate the patient, stop the inhalation at once, invert the patient's head downwards, holding the tongue with the forceps and drawing it forwards, set up artificial respiration, apply cold douche to the face and slap the chest. To resuscitate the heart and respiration, inject hypodermically atropine or strychnine or try faradization. Sometimes inhalation of amyl nitrite or injection of ammonia hypodermically has been known to do good. Application of hot bottles or of heat to the body and limbs often restores circulation.

Æther Aceticus, B.P.—Acetic Ether—Ethyl Acetate. Mix together sodium acetate, alcohol and sulphuric acid and distil. To the distillate add potassium carbonate or calcium chloride and re-distil. Occurs as transparent, colourless, volatile, inflammable liquid, of an aromatic, refreshing ethereal acetous odour, acetous burning and pungent taste. Highly inflammable. Soluble in alcohol, ether, chloroform and in water (1 in 10). Dose—20 to 40 ms., for a single dose 60 to 90 ms. Used in the preparation of Liquor Epispasticus, Spiritus Odoratus and Tinctura Ferri Acetatis.

Actions and uses.—Stimulant, narcotic and antispasmodic. It is weaker than ether, but of a more agreeable taste; given in combination with other carminatives in spasmodic nervous affections, as hysteria, neuralgia, &c.

Æthyl Bromidum—Ethyl Bromide—Bromethyl—Æther Bromatus—Hydrobromic Ether, Mono-bromo Ethane. To prepare it, mix alcohol, bromine and phosphorus, and distil. It is a non-inflammable, colourless, very volatile liquid, of a sweet taste and pleasant odour of chloroform, soluble in water (1 to 70), freely so in alcohol and ether. Liberates free bromine on keeping. Dose—1 to 2 drs. Used as capsules 5 ms. in each. Solution (1 in 200) known as liquor ethyl bromidi.

Actions and uses.—Nervine sedative, antispasmodic and anæsthetic. When inhaled it does not irritate the throat or the air passages. The excitement, the subsequent rigidity, and the stage of insensibility are of short duration; there is slight mental confusion and prompt awakening. As a local anæsthetic it is rapid in its effects, abolishes the pain without loss of consciousness. Used in opening abscesses, boils, in extracting teeth, &c. The liquor is inhaled to relieve the pain of migraine; the solution is injected hypodermically in angina pectoris, whooping cough, chorea, epilepsy and hysteria. Internally it may be given in asthma and to relieve flatulence. It must not be mistaken for ethylene bromide.

Æthyl Iodidum—Ethyl Iodide—Hydriodic Ether.—Mix together phosphorus 5, alcohol 70 and iodine 100, and distil; or mix together hydriodic acid and olefiant gas in a sealed glass vessel. A colourless non-inflammable liquid, of ethereal penetrating odour. Dropped on burning charcoal it emits purple vapour; contains 80 per cent. of iodine. It is soluble in alcohol and ether, very slightly so in water. Used as solution 10 to 20 per cent., of which 5 to 6 drops are used for inhalation. Capsules containing 5 ms. of iodide of ethyl alone or with chloroform 10 ms. are always kept ready for use, as free iodide of ethyl decomposes in the air and becomes brown owing to the liberation of iodine.

Actions and uses.—Alterative, general stimulant and anæsthetic. Its chief use is to bring the system rapidly under the influence of iodine. Used as inhalation in asthma, cardiac and chronic bronchial or pulmonary disorders, cardiac dyspnœa and œdematous laryngitis. As a general stimulant it sharpens the appetite, stimulates the heart and promotes or gives activity to the intellect. As an alterative it is given in secondary and tertiary syphilis, scrofula, chronic rheumatism, &c.,

generally given as an adjunct to iodide of potassium. It is also applied with benefit to the cavity of the uterus.

Spiritus Ætheris Nitrosi, B.P.—Spirit of nitrous ether—Sweet spirit of nitre. An alcoholic solution of ethyl nitrite, aldehyde, paraldehyde and other substances. To prepare it, add diluted sulphuric acid to alcohol to form ether. To this add nitrous acid produced by nitric acid in the presence of copper wire, when nitrous ether is formed; add sufficient spirit to produce a liquid containing 2½ per cent. and never less than 1·75 per cent. of ethyl nitrite. A clear mobile, inflammable, volatile liquid, of a pale yellow tint, apple-like odour and sharp burning taste. It is incompatible with iodide of potassium, sulphate of iron, tinctura guaiaci, tannic and gallic acids, and antipyrin. Dose—20 to 40 ms.

Actions and uses.—A diffusible stimulant, vaso dilator, similar to amyl nitrite. It is a cardiac stimulant; it lowers the arterial tension, relieves the peripheral vessels and diminishes oxygenation of blood. It is also carminative, diuretic and diaphoretic. It is given in fevers to promote sweating. As a stimulant diuretic it is given in chronic affections of the kidneys. Its action depends upon the presence of ethyl nitrite contained in it. As many specimens contain very little of ethyl nitrite, some regard this drug as almost inert.

Æthyleni Bromidum.—Æthylene Bromide—Ethylenum Bromatum.—To prepare it, pass ethylene into bromine. A colourless liquid of a sweet taste and chloroform-like odour, insoluble in water, soluble 1 in 4 of 90 per cent. of alcohol. It mixes with oils and also with alcohol. It contains 90·9 per cent. of bromine. Used in alcoholic or oily solution or as capsules. Used also hypodermically. Dose—1 to 2 ms.

Given as a nervine sedative in chronic epilepsy. In large doses it causes nausea.

Æthyl Chloridum—Ethyl chloride—Chloride of ethyl—Monochlorethane—Hydrochloric ether. To obtain it, heat together alcohol and hydrochloric acid under pressure. A highly inflammable gas at ordinary temperature and pressure. When compressed it forms a colourless liquid of a strong penetrating odour and a sweet burning taste, readily soluble in alcohol, slightly so in water; produces intense cold on evaporation. Supplied in capsules or glass tubes.

Anestile or anesthyl.—A mixture of ethyl chloride and methyl chloride. It is a volatile liquid, evaporating quickly and at a low temperature. As local anæsthetic both are used as spray in dentistry to extract teeth; in relieving pain in neuralgia, in ingrowing of nails, opening abscesses, &c. The spray is applied to the nape of the neck in girls in hysterical aphonia. Anestile, as an anæsthetic, is quicker and more extended in action.

Æthylene Bichloride—Ethene chloride—Dutch liquid.—Contains equal volumes of hydrocarbon-ethylene and chlorine. A colourless volatile liquid, of a sweet taste and chloroform-like odour. Soluble in alcohol or ether, sparingly soluble in water. As an anæsthetic, it paralyses the respiratory centre before paralysing the heart. It is more powerful and safer than chloroform, but less so than ether. It is more rapid in its effects, more pleasant to take, causes less excitement, and the recovery from it is more rapid. In neuralgia it is very beneficial when locally applied. It generally irritates the throat and is therefore not much used for inhalation.

Liquor Ethyl Nitritis, B.P.—A mixture containing 95 parts by volume of absolute alcohol, 5 parts by volume of glycerin, and containing not less than 2½ and up to 3 per cent. by weight of ethyl nitrite. Obtained by the action of dilute sulphuric acid on alcohol and sodium nitrite. A limpid, colourless liquid with apple-like odour and taste. Sp. gr. 0·823 to 0·826. Highly inflammable. Dose—20 to 60 ms.

Actions and uses.—A good substitute for spiritus ætheris nitrosi, to which it is preferred on account of its containing a fixed and reliable quantity of ethyl nitrite. Given in asthma, chronic bronchitis, and to relieve dyspnœa.

Agathin—Salicyl Aldehyde a Methyl-phenyl-hydrazone.—To obtain it, mix together methyl-phenyl-hydrazine and salicyl aldehyde. Small white crystals, slightly greenish, without any odour or taste, soluble in alcohol, benzene and ether, insoluble in water. Dose—4 to 8 grains. As an antineuralgic, antirheumatic, and analgesic, used in neuralgia, articular rheumatism and sciatica.

Agurin—A derivative of theobromine.—Analogous to diuretin and uropherin. It contains larger proportions of theobromine. A white hygroscopic powder, of alkaline reaction. Soluble in water. Dose—5 to 10 grs. in capsules. A fine diuretic, increasing the proportion of urea, chlorides and phosphates in the urine, and hence given in dropsy due to cardiac disease, &c.

Airol—Bismuthi Oxyiodogallas.—A combination of bismuth subgallate and iodine. A fine light grayish-green powder. Insoluble in water and alcohol, without any odour and without any taste. Unaffected by exposure to sunlight. Extremely bulky, being 4 times as light as iodoform and twice as light as dermatol.

Used as dusting powder. Ointment (1 in 20) of lanolin, vaselin or lard. Emulsion (1 in 10) of glycerine.

Actions.—Non-irritant antiseptic like dermatol, and a good substitute for iodoform; applied to abrasions, unhealthy sores, ulcers and burns. Used as an injection in gonorrhœa. Used as an ointment in lupus, leprous ulcers, intertrigo, boils, whitlows, chancres, &c.

Akolethe.—A solution of the sedative principles of opium. It is free from nauseous taste and from any other unpleasant after-effects of opium. Dose—10 to 30 ms. Used as an anodyne and hypnotic, with satisfactory results in obstetric practice.

Albargin.—A silver and albumen compound, containing silver and gelatose (a transformation product of glue). A bulky powder of a yellow colour, freely soluble in cold and warm water without decomposing. The solution is neutral. It contains 15 per cent. of silver. Used as an injection (2 per cent. solution) in gonorrhœa.

ALCOHOLS.

These are hydrocarbon bases in combination with hydroxyl; or hydrates of the organic radicals. They are volatile organic compounds, containing no nitrogen. They have a great affinity for water. With acids they form ethers; hence alcohols are similar to metallic hydrates, as ethers are to salts.

Varieties.—Alcohols are principally methyl alcohol, phenyl alcohol and fermented alcohols.

Methyl alcohol is obtained by the destructive distillation of wood; phenyl alcohol, or phenol, obtained by the distillation of coal tar; and fermented alcohols, as ethyl, amyl, &c., from any vegetable substance containing sugar or starch, with the ferment (diastase) by the action of yeast plant on the sugar by splitting it up into alcohol and carbonic acid. Alcohol is synthetically prepared by shaking up olefiant gas with strong sulphuric acid, by subsequent dilution and distillation.

Alcohol is a transparent, colourless, inflammable volatile mobile liquid, of an agreeable odour and burning taste. It burns with a blue flame. When slowly oxidised it forms aldehyde; if less slowly, acetic acid; if quickly, carbonic acid and water.

Alcohol Absolutum, B.P.—Absolute alcohol—Pure alcohol—Ethyl alcohol—Ethyl hydroxide.—It should not contain more than 1 per cent. of water by weight. Sp. gr. ·794 to ·7969.

Alcohol deodoratum contains about 92½ per cent. by weight of absolute alcohol.

Alcohol Dilutum, B.P.—Diluted alcohol contains 70, 60, 45, and 20 per cent. of absolute alcohol by volume.

Spiritus Rectificatus, B.P.—Rectified spirit contains 90 parts by volume of ethyl hydroxide. Sp. gr. ·8340. It is miscible in ether, chloroform and in water, without producing any cloudiness; used in preparing liquors, mixtures, tinctures, spirits and liniments.

Spiritus Tenuor.—Proof spirit contains spiritus rectificatus and water (5 to 3). Sp. gr. 920.

Denaturalized methylated spirit contains rectified spirit with 10 per cent. of wood spirit or mineral naphtha by volume. Amylic alcohol exposed to the air oxidizes into valerianic acid. It is used in the preparation of amyl nitrite, sodium valerianate and valerianic acid. Alcohol Methylicum—Methylic alcohol—Methyl hydrate—Pyroxilic or pyroligneous spirit.—In commerce known as wood naphtha or wood spirit, occurs as a liquid, of a very disagreeable odour.

Spiritus Myrciæ—Bay rum.—Contains oil of myrciæ 16, oil of orange peel 1, oil of pimento 1, alcohol 1,220 and water to 2,000.

Alcohol Allylicum—Allyl alcohol—Allyl Hydroxide.—A colourless liquid of a pungent odour and burning taste, mixes with water; a powerful antiseptic.

Alcohol Amylicum, B.P.—Amyl alcohol—Amyl hydrate—Potato spirit—Fusel oil.—Obtained from potato by fermentation and repeated distillation; also from crude spirit. It is an oily liquid, colourless, of a peculiar oppressive odour and burning acrid taste; soluble in alcohol, ether and essential oils and insoluble in water, becoming milky.

Spiritus Frumenti—True whisky.—To obtain it, distil the mash of fermented grain, such as corn, wheat or rye, or a mixture of all three. An amber-coloured liquid of peculiar odour and taste. It contains 44 to 50 per cent. by weight, or 50 to 58 per cent. by volume, of alcohol. Sp. gr. from 917 to 930.

Spiritus Vini Gallici, B.P.—Brandy.—To obtain it, distil fermented juice of fresh grapes. It contains 36·5 per cent. by weight and 43·5 per cent. by volume of ethyl hydroxide, together with some volatile oil. On long keeping, œnanthic and other ethers are developed. Caramel is often added to give colour to it. It is often artificially prepared by adding to high wines acetic or nitric ether, caramel, and logwood or catechu for astringency.

Vinum Album—White wine.—To obtain it, ferment juice of fresh grapes freed from seeds, stems and skin. It contains 10 to 14 per cent. by weight and 12·5 to 17·5 per cent. by volume of absolute alcohol.

Vinum Rubrum—Red wine.—To obtain it, ferment the juice of colored grapes with skins. It contains the same quantity of alcohol as in the white variety.

Vinum Xericum, B.P.—Sherry or Spanish wine.—Pale yellowish brown wine, containing 16 per cent. by volume of absolute alcohol.

Gin.—It is similar to spiritus juniperi compositus. It contains 42 per cent. by weight of alcohol. To obtain it, distil fermented barley or rye and flavour with juniper, hops or turpentine, various aromatics; also acetate of lead, cayenne pepper, sulphate of zinc, &c. Dry acid wines—Hock, Moselle, Rhine, &c.—contain alcohol 5 to 7 per cent.

Beer, ale and porter are fermented liquors obtained from malted grain with hops or other bitters added. Beer contains 2 to 3 per cent. of alcohol. Ale and Porter contain from 4 to 6 per cent. of alcohol. Kumyss is obtained from fermentation of milk; it contains sugar, lactic acid, fat, casein, salts, carbonic acid and alcohol 1 to 3 per cent.

Rum is distilled from fermented molasses. Contains 42 per cent. of alcohol.

Spiritus Coloniensis—Eau-de-Cologne—Cologne water—Perfumed spirit—Spiritus odoratus.—Contains alcohol 800, water 158, acetic ether 2, oil of bergamot 16, oil of lemon 8, oil of rosemary 8, oil of lavender flowers 4, oil of orange flowers 4.

Aromatic wine—Vinum Aromaticum. Contains white wine 94, lavender 1, origanum 1, peppermint 1, rosemary 1, sage 1, wormwood 1.

Sparkling wines (Champagne, Hock, sweet wines).—These are charged with carbonic acid and prepared from grape sugar. Contain alcohol 8 to 10 per cent.

Physiological action.—Stimulant, anæsthetic, intoxicant, deliriant, antipyretic, sudorific, and antispasmoidc. Taken undiluted, it stimulates the circulation, there is dilatation of the arterioles, a general feeling of glow over the whole body. When taken in a diluted form and in moderate doses, it stimulates the brain, increases the gastric juice, stimulates the gastric glands, promotes appetite, and assists digestion. Under its use the quantity of waste products, as urea and carbonic acid, becomes less, and there is a slight increase of body heat. In large doses, and frequently taken, it irritates the gastric mucous membranes, precipitates pepsine, and leads to hepatic and gastric congestion, to chronic gastritis, dyspepsia and vomiting of gastric mucus. In the brain it leads to alcoholic delirium characterised by great restlessness, want of sleep, tremor of the tongue and limbs, and delusions with the sense of sight. When taken for a long time and in still larger quantities, the liver becomes cirrhosed, its parenchymatous structure atrophies, and it undergoes fatty degeneration. There is fatty degeneration of the heart and kidneys, with the attendant gout, diabetes, epilepsy and insanity. Persons taking alcohol, especially sweet wines in large quantities, often become obese. In them, alcohol, acting upon the ameboid movements of the white corpuscles of the blood, diminishes oxidation of the tissues, and lead to imperfect combustion of fat, which finally accumulates. Its effects upon the nervous system is at first excessive stimulation soon followed by depression. At first the intellect is affected, then the judgment, next the imagination; there is want of control over emotions, the patient either cries or laughs loudly without any cause. He soon loses control over speech, mutters incoherently and thickly. The movements are inco-ordinately performed and often become paralysed. The reflex movements are abolished.

Therapeutics.—Alcohol is of benefit in all cases where the heart and the general system require to be supported. It prevents the shock both before and after operations. Brandy diluted with hot water produces diaphoresis, chiefly in the threatened attack or in the cold stage of ague and in coryza. In weak digestion given in small doses it stimulates the gastric secretion.

Whisky is preferred because brand for brand it is obtained of a purer quality than brandy. In more serious cases, brandy is a better stimulant, as it contains volatile oils and œnanthic ether. It has, however, a tendency to produce constipation in some. Unless brandy is of a superior brand, its use even in extreme cases is not desirable.

Wines, on the other hand, are indicated during convalescence from acute diseases in the aged, feeble or those exhausted by over-work and those suffering from low

fevers and other asthenic conditions, to sustain the heart and general physical strength. As a general stimulant and antipyretic alcohol is given in pneumonia, diphtheria, typhoid and other fevers. It is used in extremely large doses, sometimes as much as 4 to 6 ozs. of brandy in 24 hours. In erysipelas, pyæmia and other septic fevers it is given to retard suppuration. It is also used as a restorative after great fatigue. It is generally given to deaden local pain and cause sleep. In anæmia, chlorosis and profuse hæmorrhages, in syncope and in snake poison its use is very extensive. Red wines contain more tannin and hence given in leucorrhœa, diarrhœa, &c.

Locally, alcohol is a rubefacient and slightly anæsthetic; applied to the skin it evaporates, leaving a sense of coolness, contracting the peripheral vessels and checking the secretion of the sweat glands. If applied to the mucous membrane of the mouth or pharynx, there is a burning sensation in the mouth with increased flow of saliva and irritation in the throat. In contact with the mucous membrane it produces slight anæsthesia.

Locally, diluted alcohol is a disinfectant and antiseptic; also cooling and astringent; used as a lotion for wounds, sores, bruises, sprains, &c. Eau-de-Cologne with water is used as a lotion for headache. Locally applied to bedsores, cracks and chaps on hands, nipples, &c. Diluted alcohol is used as a rubefacient over the surface of the body in fevers; it relieves the pain of lumbago, myalgia, &c. The lotion is used as a gargle in affections of the throat, tonsils, larynx, pharynx and in diphtheria.

Aldehyde is a contracted form for alcohol dehydrogenated. It is an oxidation product of alcohol, chemically intermediate between alcohol and acid.

Acetic Aldehyde.—A colourless liquid, of a characteristic odour, miscible with water, alcohol and ether; readily oxidises into acetic acid. Vaporizes on exposure to the air.

Aldehydum dilutum contains 15 per cent. of aldehyde. A colourless neutral liquid, odour very suffocative, causing spasms of the glottis when respired. Dose—One tea-spoonful of a solution (80 ms. to 1 oz.) to a pint of water. As an inhalation the vapour is used for nasal and laryngeal catarrh and ozæna.

Allyl-tribromidum—Tri-bromo-propane. A colourless or yellow liquid, very soluble in ether and alcohol, crystallizes in cold. Dose—5 to 10 ms. Used in capsules, also hypodermically, 2 to 3 ms. of it with ether 20 ms. It checks convulsions due to picrotoxin or strychnine. It is given in hysteria, asthma, whooping cough, infantile convulsions, gastralgia, neuralgia and angina pectoris, with benefit.

Alphol—Salicylic Ether of A. Naphthol.—A whitish powder, insoluble in water, soluble in alcohol Dose—8 to 30 grs. Intestinal, antiseptic, antirheumatic and anodyne; given in rheumatism, neuralgic affections, gonorrhœa, vesical catarrh, &c.

Alsol.—Aluminii Aceto Tartras.—Aceto-tartrate of Aluminium. Dissolve basic acetate of alumina 5 in solution of tartaric acid 2, and evaporate. Fine yellow granular crystals, soluble in water (1 in 1), insoluble in alcohol, ether and glycerin. Used as a gargle (30 grs. to a pint), douche (sol. 2 per cent.) and snuff. A non-poisonous caustic, antiseptic, disinfectant and local irritant. In contact with mucus membranes it produces a superficial scar with effusion of serum; chiefly used in diseases of the nasal fossæ as polypi of the pharynx and larynx. As a gargle with boracic acid it is used in rhinitis, sore mouth, tonsillitis and sore throat, and as a douche in leucorrhœa.

Alumnol.—Aluminium-Napthol-di-sulphonate.—An aluminum salt of naphthol, and sulphonic acid. A greyish light powder, soluble in water, less soluble in glycerin and alcohol. It precipitates albumen and gelatine. The precipitate is soluble in excess of ether. Used as solution 1 to 5 per cent., ointment 10 per cent.; suppositories and soloids 4 grs. each to prepare solution.

Actions and uses.—Antiseptic, astringent, non-irritant, allied to sozal and sozoidol. As an antiseptic the solution is used in purulent discharges from ulcers and from small abscesses and cavities. The ointment is used as a dressing for suppurating wounds and in parasitic skin affections. A 4 per cent. solution is used to check lachrymal discharges and as an injection for gonorrhœa, ozæna, &c. The dry powder is applied to the throat in laryngitis, rhinitis, pharyngitis, &c.

Aminol—A liquid containing trimethylamine and other amines prepared from herring brine.—Used as solution, lotion, gargle or spray. As a liquid disinfectant and germicide it is given internally in diabetes and also used to disinfect cesspools, sewers, &c.

Ammonii Picras—Carbazotate of Ammonia.—A yellow crystalline salt. Dose—¼ to 1½ gr. Used in pill. As an antiperiodic it is given in ague and malarial fevers. A good substitute for quinine.

Ammonol—Ammoniated Phenyl Acetamide.—A coal-tar product containing acetanilide 2, sodium carbonate 1, ammonium carbonate 1, and a yellow dye (a trace).

Occurs as amorphons crystals or white or pale yellow powder. Taste and odour pungent and ammoniacal, sparingly soluble in water. Dose—5 to 20 grs.

Ammonol Salicylate.—Contains salicylic acid 50 per cent. and acetanilide 17 per cent. Used as a powder or tabloids 5 grs. in each.

Actions and uses.—Antipyretic, analgesic, stimulant and expectorant. Given in gastric and intestinal catarrh, neuralgia, migraine and rheumatism.

Amyl Hydride—Pentyl Hydride—Pentylene—Hydramyl.—Other impure varieties are known as rhigolene and ligroin. Obtained by fractional distillation from petroleum spirit. It is the lightest inflammable liquid, of a faint and pleasant odour and slight taste. Its vapour can be inhaled easily without irritation.

Preparations.—Anodyne amyl colloid and anæsthetic ether.

Actions and uses.—General and local, non-irritant anæsthetic, used as a spray or inhalation. Locally applied, it freezes the part. A weak solution of it mixed with spermaceti and camphor is applied with cotton wool on burns.

Amyl Nitris, B.P.—To obtain it, add nitric acid to, or pass nitrous acid vapour into, amylic alcohol and distil; or mix sodium nitrite, amylic alcohol, and sulphuric acid together and distil. It consists chiefly of iso-amyl nitrite with some other constituents, such as isobutyl nitrite, propyl nitrite, &c. An ethereal pale-yellow liquid, of a peculiar fragrant odour and pungent aromatic taste, neutral or of slightly acid reaction, almost insoluble in water and freely soluble in alcohol, ether, chloroform and benzin. Used as inhalation. Dose—2 to 5 ms.; for inhalation internally in capsules ½ to 1 m.

Preparation.—Mistura amyl nitritis. (4 ms. to 1 oz.) Dose—1 to 2 drs.

Physiological action.—Nervine sedative, cardiac and hepatic stimulant and respiratory depressant. Like other nitrites it lowers arterial tension, paralyses the sympathetic system, or the vasomotor centre. When inhaled, it causes a powerful or tumultuous action of the heart, throbbing of the carotids, flushed face, frequent pulse and vertigo. As a respiratory depressant, it paralyzes the respiratory muscles, diminishes the oxygenation of blood, lowers the body heat, and the blood becomes dark.

It increases the quantity of, and gives rise to sugar in, the urine. *Therapeutics.*—A good palliative in angina pectoris, chiefly of a nervous origin, also in epilepsy and tetanus. Inhalation of 2 or 3 drops breaks off the cold stage of ague. In respiratory neurosis, as asthma, hysteria, neuralgia, convulsions, headache, laryngismus stridulus, migraine and whooping cough, in renal and hepatic colic it is of great benefit. As a cardiac stimulant it is given in threatened syncope or collapse, and faintness; occasionally it is used in sea sickness, sometimes in poisoning by strychnine, cocaine or chloroform. It should be very cautiously given in old subjects or in those with organic disease of the brain and heart.

Tertiary Amyl Nitrite—Bertoni's Ether.—Prepared from tertiary amyl alcohol or amylene hydrate.

An amber-coloured mobile liquid, of a camphoraceous and terpin-like odour, insoluble in water and in alcohol and slightly so in glycerin. The vapour is inhaled from 60 to 90 ms. in a day. Used like amyl nitrite as a hypnotic, nervine sedative or cardiac stimulant. The effects are more lasting and more marked. It does not cause flushing of the face. Given in angina pectoris, epilepsy, convulsions, and hysteria. In large doses, cyanosis supervenes, which should be taken as a guide either to reduce the dose or stop it entirely. Given in threatened syncope or collapse, hysteria and other spasmodic diseases, laryngismus stridulus, and whooping cough.

Amyloform.—A chemical combination of formaldehyde and starch. A fine white powder, insoluble in any menstruum, free from smell, slightly gritty to the touch. Used like iodoform as antiseptic dusting powder or as gauze.

Actions and uses.—Non-toxic germicide, non-irritant, arrests unhealthy discharges from wounds, ulcers, &c., which become clean and granulate freely. It leaves no ill after-effects of iodoform. Removes the fœtor, and checks the growth of bacteria. The gauze is used for plugging the uterus after curetting it in cases of retained placenta.

Amyleni Chloral.—Di-methyl—Ethyl—Carbinol—Chloral.—A combination of chloral and amylene hydrate. An alcoholic colourless oily liquid of a peculiar camphor-like odour and slightly caustic taste. Insoluble in water, freely soluble in ether, alcohol, acetone and fatty oils. Dose—20 to 60 ms. As a hypnotic it causes refreshing sleep, does not interfere with digestion. Given in insomnia, vomiting of pregnancy, ovarian irritation leading to nausea, mental worry, &c.

Amyleni Hydras—Amylene Hydrate.—Di-methyl-Ethyl-Carbinol.—Tertiary Amyl Alcohol. To obtain it, treat impure amylene with sulphuric acid, diluted with water, neutralize with milk of lime or liquor soda, and then distil. A clear oily liquid, of a peculiar penetrating odour, resembling a mixture of camphor and peppermint, and of burning taste, soluble in water (1 in 8), freely so in alcohol, ether, chloroform, benzene and glycerine. Used as capsules. Dose—30 to 80 ms.

As a hypnotic, antispasmodic and sedative it is safer than chloral, and more agreeable than paraldehyde. It does not interfere with digestion. Given in epilepsy, insomnia, &c. It should not be given during fever. It is antagonistic to strychnine.

Amyli Iodidum—Amylum Iodatum—Iodized starch.—A deep, bluish-black powder; a weak combination containing iodine 1 and starch 20. Dose—1 to 4 drs. As an alterative given in syphilis, in lupus erythematodes, also in putrid diarrhœa. Used as an antidote in cases of poisoning by alkalies, alkaloids, alkaline sulphides, ammonia and sulphuretted hydrogen.

Amyli Salicylas.—A good substitute for methylic salicylate. A colourless fluid, odour resembling that of salol. Insoluble in water, soluble in ether, chloroform and alcohol. Dose—3 grs. in capsules. As a sedative and antirheumatic it is used as a paint over the joints (about 30 grs.) and the evaporation retarded by a compress of guttapercha. Given internally to relieve rheumatic pain and swelling of joints.

Analgene—Benzanalgen—Ortho-oxy-ethyl-ana-mono-benzoyl-amido-quinoline. A derivative of chinolin and a coal-tar product. White or colourless crystals, tasteless, insoluble in water, readily soluble in hot alcohol or acids. Dose—5 to 15 grs. It has a destructive action on the red corpuscles of the blood. It is analgesic, antirheumatic and antineuralgic like phenacetin and antifebrin, but leaves no unpleasant after-effects. Given in acute rheumatism, fever, neuralgia, hemicrania, bronchial asthma, &c. It gives the urine a very high red color.

Analgesine—Contains acetanilide 60, ammonium chloride 20, citrate of caffeine 10, and sodium bicarbonate 10. Dose—5 to 15 grs. Used as analgesic, antineuralgic and antipyretic, in fever, rheumatism, neuralgia, &c.

Anasarcin—A combination of the active principles of oxydendron arboreum, sambucus canadensis, urginea scilla, &c. Used in Bright's disease, valvular cardiac disease, cirrhosis of the liver, goitre, dropsy, &c.

Aniline—Phenylamine—Monophenylamine—Amido benzene. A coal-tar product. A colourless oily liquid. Odour characteristic. Soluble in alcohol, ether and oils. Exposed to the air it assumes a pale straw colour. Aniline colours : These are—Methylene blue, methyl violet (pyoktanin) and fuchsine (magenta). Aniline compound—Contains aniline 1 part, oil of eucalyptus 7 ; oil of anise, peppermint and gaultheria may be added as diluents. Used as an inhalation in phthisis.

Aniline Camphorate—Small, white, pinkish prisms. Soluble in water, alcohol and glycerin. Taste pungent and acrid. Dose—1 to 3 grs. Used as an antispasmodic internally or hypodermically in phthisis.

Aniline sulphate with bismuth nitrate is given in asthma. Dose—$\frac{1}{2}$ to 3 grs.

Actions and uses.—Aniline is bactericide ; used to destroy tubercle bacilli in the blood.

Anilipyrin—Obtained by heating acetanilide 1 and antipyrin 2 parts. A fine powder, soluble in the usual solvents. Dose—8 to 15 grs. It is slightly toxic. Given in influenza, headache, neuralgia, &c.

Anthrarobin—Des-oxy-alizarin—Dioxy anthranol. It is obtained by the action of nascent hydrogen on alizarin, or by the reduction of alizarin by zinc dust. A good substitute for chrysarobin. A light brown or yellowish-white powder, insoluble in water but soluble in alcohol, chloroform, ether, glycerin, and alkaline solutions. It has a great avidity for oxygen and when exposed to the air it oxidizes readily, hence used as a powerful deoxidizing agent and as antiseptic ointment (5 to 10 per cent.) in tinea tonsurans, herpes, erysipelas, psoriasis, eczema, ringworm, &c.

Antiarthrin—A condensation product of the extractives of the horse chestnut. To obtain it treat the extractives with salicin, hydrochloric acid, dextrose, tannic acid, or saligenin. A white powder soluble in alcohol, alkalies, and sparingly so in acetone. Used as powder or tablets. Dose—15 to 25 grs. As an analgesic, antilithic, diuretic and hypnotic, it relieves pain, discomfort, swelling and redness of the joints. Hence given in gout, rheumatism, uric acid diathesis, with gouty deposits and in cases where salicylic acid and piperazine have failed.

Antifungin—Liquor magnesii boratis. Contains magnesium carbonate 2, boric acid 15, and water 75. Used as a paint in diphtheria.

Antikamnia.—Means opposed to pain. A coal-tar product of hydrocarbon or benzene series. Contains acetanilide 70, caffeine 10, and sodium bicarbonate 20. It is a white powder of a bitter taste and alkaline reaction. Insoluble in water, dissolves freely in all alcoholic liquids. Used as tablets 5 grs. each or compound powder containing heroin hydrochloride $\frac{1}{12}$ gr. Dose—5 to 15 grs.

It is a respiratory stimulant, sedative, expectorant and analgesic. Given for the relief of neuralgic, rheumatic, and other acute pains. It does not depress the heart like antifebrin or antipyrin. The compound powder is given in nervous persistent headache, trifacial neuralgia, sciatica, pulmonary affections and in laryngitis, pneumonia, dyspnœa, coryza, and whooping cough. In dysmenorrhœa chiefly of the spasmodic variety it is very beneficial. In nocturnal cramps, in nervous tremors, in confirmed drunkards and in angina pectoris it is used with good results.

Antikol—Antilupin—Contains acetanilide 70 per cent. with quinine bisulphate, caffeine citrate and sodium bicarbonate 10 per cent. each. Given in tablets for the relief of neuralgic and rheumatic, pains, in fever and atonic dyspepsia. Dose—5 to 15 grs.

Antinervin—Sal bromalide (salicyl bromalide)—Contains acetanilide 2, bromide of ammonium or potassium 1, and salicylic acid 1. Dose—5 to 15 grs.

Used as a hypnotic in insomnia, hypochondriasis, &c.

Antinonnin—A mixture of ortho-dinitro-creso-kalium with soap and glycerin. A yellow paste, odour soapy, soluble in water (1 in 20). As an antiparasitic and insecticide used in skin diseases infected with animal parasites, and to preserve wood from dry rot and from fungi.

Antinosin.—A soluble sodium salt of nosophen. A greyish-blue powder of a faint iodine odour. As an antiseptic and disinfectant, used as an injection in minor gynæcological operations. In vesical catarrh the solution is injected into the bladder with benefit. Dose—3 to 8 grs.

Antiphlogistine—Contains glycerin, boracic acid, salicylic acid, iron carbonate, peppermint, gautheria, eucalyptus and iodine combined with dehydrated oxide of silicate of magnesia and alumina. Used as an antiseptic, anodyne and antiphlogistic dressing; as warm and thick poultice over inflamed glands, boils, synovitis, tonsilitis; in inflammation of the skin, muscle or joints; also in acute rheumatism, pleurisy, pneumonia, peritonitis and erysipelas.

Antipyonin and Glacialine—To obtain it equal parts ofboracic acid and borax are heated together in water. The solution evaporated and crystallized. A fine powder, of a greasy feel. Used as an antiseptic.

Antipyrinum, Analgesine—Phenazonum Phenyl-di-methyl-iso-pyrazolone, B.P. A coal-tar product. A synthetic base forming salts, analogous to those of ammonium. Obtained by the action of aceto-acetic ether on phenyl-hydrazine, the resulting phenyl methyl-iso-pyrazolone is next treated with methyl iodide. Colourless, inodorous scaly crystals, of a bitter taste, soluble in water (1 in 1), in alcohol and chloroform (1 in $1\frac{1}{2}$) and in ether (1 in 40). It gives a green colour with nitrous acid and a yellow colour with nitric acid, deep red with ferric chloride. Dose—5 to 20 grs. Used as granular effervescent antipyrin (1 in 12). Dose—1 dr.

Injectio antipyrin et cocaine hypodermica—1 gr. of cocaine hydrochloride in 150 ms. of Injectio antipyrin hypodermica or containing 1 grain of antipyrine in 2 ms. Dose—8 to 30 ms. Suppositories 5 grs.each; antipyrin tablets 3 grs.each; antipyrin aromatic elixir. Dose—a table spoonful (15 grs). Given in bilious headache.

Physiological action—A powerful, certain, and rapid antipyretic, cerebral and cardiac depressant, general analgesic and hæmostatic, also mydriatic, antiseptic and diaphoretic. It at first stimulates the heart, and a sense of heat with flushing of the face is experienced for a short time, followed by a lowering of temperature, cold skin and profuse diaphoresis. If given in large doses, it gives rise to nausea, vomiting, great depression of spirits. If given with kairin the lowering of the temperature lasts longer than when given alone. After a time the temperature rises preceded by a slight chill. In some cases it dilates the pupils. Its presence is found in the urine within a short time after taking it. In some cases of idiosyncrasy it gives rise to urticaria In toxic doses it depresses the function of the spinal cord and leads to paralysis of the motor and sensory nerves, it acts as a poison on the blood, it decreases arterial pressure and acts as an analgesic, and it is useful in relieving pain in rheumatism.

Therapeutics.—It is given in large doses as 15 grs. in sthenic fevers, typhoid fever, influenza, erysipelas, acute rheumatism, tuberculosis, and sunstroke where the temperature is very high. Being non-irritant and analgesic it is given with benefit in migraine, bilious headache, hemicrania and injected hypodermically in tic doloureux, lumbago, sciatica, biliary and nephritic colic, in asthma and in severe dyspnœa. In incontinence of urine and in diabetes its use is highly extolled. The pains during delivery, without retarding its progress, may be relieved by rectal enema of 30 grains in 6 ounces of water. It also relieves uterine after-pains. Given with sodium carbonate it is said to dissolve urinary calculi. It relieves nervous irritation and restlessness of hysteria, allays itching in pruritis, lichen, erythema, pemphigus, urticaria, &c., and is given with benefit in epilepsy, chorea, whooping cough, and locomotor ataxia. Like cocaine it is a local anæsthetic. As a hæmostatic it is by some regarded as superior to ergot. The solution is used as a spray (1 in 40) in hæmoptysis, and in epistaxis, uterine hæmorrhages and in bleeding from wounds. In pulmonary and other hæmorrhages it succeeds where ergot, digitalis, &c., have failed. In sea sickness it is very useful. As a galactafuge it suppresses the milk secretion. In infantile diarrhœa it has proved very useful. It is very effective in promoting absorption of pleuritic effusions.

Antipyrin-Salol—Prepared by heating equal parts of antipyrin and salol. A brown powder. As an hæmostatic given in uterine hæmorrhages.

Antipyrin tannas—Contains antipyrin and tannic acid (1 in 3²). A yellowish, flaky powder of a shining lustre of mother-of-pearls; without any taste, freely soluble in alcohol, readily decomposed by mineral acids. As an antipyretic and analgesic it is given to children in fever, rheumatism, &c. Dose—5 to 10 grs.

Antisepsin—Asepsin—Aceto-bromanilid—Parabrom-acetanilid—Monobrom-acetanilide—Monobrom-phenyl-acetamide. A bromine substitution compound of acetanilide. To obtain it add bromine to an acetic acid solution of acetanilide. Purify and crystallize. Colourless prisms without any odour or taste, contains 37 per cent. of bromine; soluble in alcohol, insoluble in water. Dose—3 to 15 grs. Used as suppositories ½ gr. each. As an analgesic, antipyretic and antiseptic it is used in septic fevers as typhus and typhoid, in facial neuralgia, phthisis and rheumatism. Its antipyretic power is four times as strong as that of antipyrin, but does not produce nausea. It has some specific action like gelsimium upon neuralgia of the fifth nerve. Locally it forms a fine coating when applied to wounds and bites. Ulcers heal rapidly under it. Suppositories are used for hæmorrhoids and anal fissures.

Antiseptin—Boro-thymol-zinc-iodide. Iodo-boro-thymolate of zinc—Contains zinc sulphate 85 parts, zinc iodide 2·5, thymol 2·5, boric acid 10. A grayish-white powder of the odor of thymol. As a dusting powder used as an antiseptic for wounds, ulcers, &c.

Antisepticine contains thyme, eucalyptol, peppermint, gaultheria and benzoic and boracic acids. A fine powder, odour aromatic, taste somewhat pungent. Used as dusting powder or solution. As antiseptic injection is used in leucorrhœa, gonorrhœa and in catarrhs of the mucous membranes. Internally it is given in zymotic diseases as typhoid and other septic fevers, diarrhœa, dyspepsia, &c. As a dusting powder it is used for wounds, burns, ulcers and suppurating surfaces.

Antiseptol—Cinchonine-iodo-sulphate—Obtained by the interaction of iodine and iodide of potassium on cinchonine sulphate. A compound analagous to quinine iodo-sulphate (herapathite). A brown powder, non-irritant, without any odour, soluble in alcohol and chloroform and insoluble in water; contains 50 per cent. of iodine. Used as an antiseptic. A good substitute for iodoform.

Antispasmin—Sodii narceine salicylate. A combination of sodium narceine and sodium salicylate. A white-reddish and slightly hygroscopic powder, freely soluble in water; contains narceine (1 in 2). Dose—½ to 1½ grs. Used as hypnotic, antispasmodic and sedative in rheumatism, neuralgias, colic, whooping cough, laryngismus stridulus, &c.

Antitetraizin.—A preparation of quinine; given for the relief of neuralgic pains, influenza, &c. Dose—3 to 6 grs.

Antithermin—Phenyl-hydrazine—levulinic acid. A coal-tar derivative, a direct combination or a compound preparation of phenyl-hydrazin with aceto-propionic or levulinic acid. Colourless crystals insoluble in water, sparingly soluble in alcohol. Dose—3 to 5 grs. Antipyretic. Allied to antipyrine. Given in high fever. It sometimes causes pain in the stomach.

Anusol—A combination of bismuth with iodo-resorcin and sulphuric acid. Used as suppositories. As a disinfectant and deodorizer it has a specific action upon the rectal mucous membrane. As a desiccant it is used for suppurating and hypersecreting surfaces. As an astringent it is applied to granulating sores. It relieves constipation, softens and removes hardened fœces, and thus causes easy and painless defœcation. In hæmorrhoids it is very useful. In catarrh of the rectum and intestinal tuberculosis and for hypertrophied prostate it is very beneficial. Suppositories—10 grs. each.

Anytols.—These are oily bodies, a new series of compounds possessing the property of rendering insoluble substances soluble in water. They are formed from various mineral oils and hydrocarbons. The oil or hydrocarbon is first treated with sulphuric acid, then neutralized with ammonia. The ammoniated salt formed is called **anytin**. The precipitate is next treated with alcohol, evaporated and crystallized. The crystallized salt is called **anytol**. Those combined with sulphur, about 10 per cent., are the best. Iodine anytol contains iodine 10 per cent. and is used in tonsillitis, leprosy, eye-diseases and ulcers. Meta-cresol-anytol (metasol) is used as a spray 2 per cent. solution, in otitis, ozæna, diphtheria, &c. Eucalyptol anytol or eucasol is used 5 ms. in 6 ozs. of water as a gargle or inhalation in stomatitis, sore throat, and influenza. Ichthyol-silver-anytol or ichthargen contains silver 30 per cent. Used as an injection (1 in 500) in gonorrhœa.

Apetol.—A compound preparation containing nux vomica, gentian, calumba, quassia, Virginian prunes, spirœa tomentosa, cinchona rubrum, sumbul, moschus, aurantii cortex, aromatics and sherry wine. Used as tonic, aromatic, bitter, stomachic, vaso-motor excitant and gastric stmulant. It is claimed for it that it aids digestion and assimilation of food. Stimulates the gastric and intestinal secretions and increases the flow of saliva. As a bitter tonic it increases the glandular secretion of the stomach and stimulates the liver. It thus promotes proteid digestion of fats and carbo-hydrates. As a secondary effect it enriches the blood, and every organ and tissue of the body gain in its growth and repair. As a tonic it is found beneficial in sexual debility or impotence. It increases the muscular and nervous activity. In nervous exhaustion and in nervous headache, anæmia, hysteria, chorea, in gastric catarrh and in vomiting of drunkards it is very beneficial.

Apiolum.—To obtain it, bruise parsley seeds, exhaust them by light acid, petroleum or ether, and distil; a semi-congested butter-like residue remains. Digest the residue with alcohol, and evaporate. Next treat it with a caustic base and redistil. A reddish-coloured liquid of the odour of parsley. It is different from the camphor, named apiol, which is solid. Used in capsules, 5 ms. each, as a uterine sedative, relieving pain in dysmenorrhœa. Its chief action is as a stimulant of the genital organ, chiefly the uterus; given in amenorrhœa and in vicarious menstruation. Dose 3 to 6 ms.

Apiolum crystallizatum—Crystallized apiol, a stearoptene, obtained from above. A good substitute for quinine. Used also as an injection with olive oil in malaria and dysmenorrhœa. Dose—3 to 10 grs.

Apolysin—monophenetedin citrate.—A granular yellowish-white powder; odour peculiar, taste less acid than that of citric acid; soluble in cold water (1 in 80), freely soluble in hot water, alcohol, glycerine and sulphuric acid. Used as an analgesic and antipyretic; non-toxic. Given with caffeine salts and bromides in neuralgia, migraine, sciatica, influenza and lumbago. Dose—8 to 30 grs.

Argentamine, Ethylene-diamine-silver-phosphate. A combination of silver phosphate 10 per cent. and ethylene-diamine 10 per cent.; an alkaline liquor, turning yellow on exposure to air. It destroys pathogenic microbes. As a paint, injection (1 in 4,000), or solution (1 in 1,000) it is used as an antiseptic, germicide and astringent. When applied it penetrates more deeply into the tissues than nitrate of silver. Used as an urethral injection in gonorrhœa. In ophthalmia in children the eyelids are everted and painted with a 4 per cent. solution followed by boric solution as a wash.

Argentol.—Argentic-quinaseptol. Silver-oxy-chinolin sulphonate. An organic combination of silver with oxy-chinolin or quinaseptol or chinosol. A non-irritant yellowish powder, without any odour, a substitute for iodoform. It decomposes in the presence of septic substances and gives off oxy-quinoline. Used as dusting powder, ointment (1 in 50) and emulsion or injection (1 in 1,000). As a non-poisonous antiseptic, non-irritant, and deodorant it is used as an injection for gonorrhœa. The dusting powder is used to heal extensive wounds and promote granulations. Also used in syphilitic sores and in skin diseases. As a hæmostatic it acts on bleeding wounds.

Argonin—Silver-casein.—An orgainc combination of silver nitrate, casein and soda. A white powder soluble in hot water rendering the solution yellow. It does not stain the hands. It is not precipitated by chlorides or albumen. An injection 1 to 10 per cent. is used as a non-irritant antiseptic. Its action is weaker than that of silver nitrate or argentamine. It has no effect on intestine

microbes. Specially useful in catarrhal and purulent conjunctivitis and as an injection in gonorrhœa.

Aristolum.—Aristol—Di-iodo-di-thymol—Di-thymol-di-iodide—Iodide of thymol annidalin. A combination of iodine 45·8 per cent. with potassium iodide in an alkaline solution of thymol. An amorphous, brownish or red, unstable, non-toxic powder, without any odour or taste; exposed to the air it decomposes and iodine is liberated. It is insoluble in water and glycerin and sparingly soluble in alcohol and freely soluble in chloroform, ether, collodion and fixed or fatty oils. It should not be mixed with alkalies, metallic oxides, or starch, as it readily liberates iodine.

Preparations.—Solution, 5 to 10 per cent. in oil or ether. Collodium aristol containing 10 per cent. Ungentum aristol contains aristol 5 to 10 per cent. Oleum aristol contains 10 per cent. in oleic acid. Liquor aristol ethereus contains 10 per cent. in etherial solution. Linimentum aristol contains aristol 5 grs., ether and alcohol 1dr. each, and soft soap 1 oz.

Actions and uses.—A valuable antiseptic, superior to iodoform, iodol or sozo-iodol, being free from odour, non-poisonous and less irritant. Used in burns, wounds, scrofulous and varicose ulcers as a valuable antiseptic dressing, in dentistry and in gynæcology, as an insufflation in cancer of the cervix uteri. It relieves pain, stops bleeding and lessens discharges. It is used as dusting powder in piles, in fœtid discharges from the eye, ear, and nose, also in herpes, tinea tonsurans, eczema, psoriasis, mycosis, lupus of the face, &c. As a cicatrizant it is used in chancres and other syphilitic ulcerations. If long continued it gives rise to iodine poisoning.

Arsinyl—Di-sodium-methyl-arseniate—An organic arsenical salt chemically allied to cacodyl, non-poisonous—properties allied to those of cacodyl. It does not, like cacodyl, impart offensive garlic-like odour to the breath and sweat; very useful in pernicious anæmia, tuberculosis and in malaria, where quinine has failed. Dose—$\frac{1}{2}$ gr., given as globules, elixir and injection.

Aseptol.—A solution of sulpho-carbolic acid—Ortho-phenol sulphonic acid or sozolic acid. The acid is prepared by the action of strong sulphuric acid on phenol. Occurs as a syrupy liquid; of a sour, acid taste and faint odour of phenol. Soluble in water, alcohol and glycerin. As an antiseptic and disinfectant it is similar in action to but possessing only one-third the power of carbolic acid and salicylic acid, but has hardly any poisonous or irritant effects. As an antiseptic it is used in surgical and eye operations. A diluted solution is applied as a paint in diphtheria and laryngitis. In the case of swollen gums and aphthæ it brings the gums to their normal condition and arrests the flow of pus. Internally it is given in pharyngitis and laryngitis with benefit.

Aseptolin—It is a solution containing Pilocarpine.—Phenas, or pilocarpine carbolate—Contains 2·75 per cent. of carbolic acid mixed with 0·02 per cent. of pilocarpine salt, *viz.*, Pilocarpine-phenyl-hydroxide. Used hypodermically in phthisis and in chronic malaria. It is injected into the abdominal parietes or into the muscles of the back. Dose 50 to 200 ms.

Aspirin, Acidum-Acetylo-salicylicum—Acetic ether of salicylic acid—Salicylo acetic acid. A good substitute for salicylic acid and its salts—a combination of acetic and salicylic acids, superior to sodium salicylate. White crystalline needles of an agreeable and slightly acid taste. When brought in contact with blood tissues and intestinal juices, it splits up into acetic and salicylic acids. It is soluble in water, ether, alcohol and in alkaline solutions. Dose—5 to 15 grs. Anti-rheumatic, antipyretic and anti-fermentative; it does not affect the heart

nor interfere with digestion. It passes through the stomach unchanged, decomposing only in the alkaline intestinal fluids. Given in fevers, rheumatism and gout. It temporarily alleviates the pain in glaucoma, iritis, &c. It is given in pleuritis with marked benefit. It is better borne in 15 gr. doses in diabetes mellitus than sodium salicylate. In influenza its good effects in relieving headache are well marked. Also given in chorea with benefit.

Aulde's Acetanilide compound—Contains acetanilide 70, caffeine 10, sodium bicarbonate 20. Used as tablets (compressed). ½ gr. in each. Dose—5 to 15 grs.

Basicin.—A good substitute for creosote and its derivatives. A vegetable antitoxin. A solution is used hypodermically as injection; the ointment containing Fowler's solution, basicin and lanolin, is used as inunction. As a sedative and antiarthritic with potassium iodide it is given internally in typhlitis and tuberculous affections, also in hip-joint disease. Locally the ointment is applied to abscesses and to the chest in tubercular diseases of the lungs, to the liver in cases of gallstone, and in hip-joint affections. The solution with atropine is used as a paint in diphtheria.

Bacillol.—A tar distillation product similar to lysol; contains cresoles 52 per cent. It is freely soluble in water and without any odour. Used as solution (1 per cent.) and powder. A powerful disinfectant, acts well on bacterum coli, bacteria of typhoid fever, &c. Used as dressing for infected wounds to check suppuration and to render granulations healthy. A 0·5 per cent. solution is used to irrigate the bladder. A 1 per cent. solution as a douche for the vagina.

Benzanilide—Benzoylanilid—Phenyl Benzamide—A coal-tar product obtained by the interaction of benzoyl chloride or benzoic acid on aniline in the presence of caustic soda. A white powder or colourless scales, almost insoluble in water, soluble in cold alcohol (1 in 58) and in hot alcohol (1 in 7). Dose—1 to 6 grs. (children), 5 to 10 grs. (adults). Antipyretic, similar to antifebrin but safer, especially suitable for children. Given in fever, small-pox, &c.

Benzbetal—Benzoyl-Phenyl-Amido-Acetic Acid. A coal-tar product. A white powder without any odour or taste. Insoluble in cold water, partially soluble in hot water, freely soluble in spirit. As an antiseptic and antifermentative it is given in diarrhœa, dysentery, enteritis and cholera. Dose—50 to 90 grs.

Benzinum—Benzin—Petroleum Ether—Petroleum Spirit, Petroleum Benzin.—A purified distilled product from petroleum. It is met with in transparent, colourless, diffusible highly inflammable fluid; odour less disagreeable than that of petroleum; soluble in ether, alcohol, chloroform, benzol, fixed and volatile oils. Insoluble in water. Sp. Gr. 670 to ·675. Boils at 122° to 140° F. A good solvent for fats, resins, caoutchouc, alkaloids, &c. Dose—5 to 20 minims in sugar or emulsion. Antispasmodic, antifermentative, sedative and anticatarrhal. It checks gastric fermentation like creosote or carbolic acid. It is given in dyspepsia, whooping cough, influenza, rheumatism and gout. Used externally for herpes, urticaria and prurigo. Petroleum spirit is used to remove grease from clothing.

Benzo-iodhydrinum—Said to contain iodine, chlorine, and benzoic acid. A crystalline body soluble in alcohol. A substitute for potassium iodide. As an alterative given for chronic bronchitis, asthma, scrofula, syphilis, &c. Dose—1 to 2 grs. with sugar.

Benzol, B.P.—Benzene phenyl hidride. A coal-tar product. To obtain it, purify petroleum with sulphuric acid and redistil. It contains 70 per cent. of benzene and 20 to 30 per cent. of toluene. A colourless, volatile liquid, free from opalescence, of a strong and characteristic odour. Sp. Gr. 880 to 888. Dose—5 to 10 ms. on sugar.

Preparations.—Guttæ benzol contains benzol 4, oil of peppermint 1, olive oil 20. Used as drops into the ear in otorrhœa. Syrupus benzene—Contains benzol pure 30 ms., glycerine 1½ oz., ol-menth. pip. 10 ms., syrupus mori 4 drs. Dose—1 to 2 drs. For whooping cough. Emulsio Benzol—Benzol 80 ms., rectified spirit 120 ms., spirit chloroform 150 ms. mucilage of tragacanth 1 oz., water 8 ozs. Ointment—Containing benzol and lard (1 to 8).

Actions and uses.—Antiseptic, sedative and insecticide; the emulsion or syrup is given in influenza and whooping cough. As a parasiticide it is applied locally to destroy pediculi capitis or pediculi pubes, also parasitic itch, scabies, &c.

Benzo-naphthol—Benzoyl-naphthol—Naphtyl-benzoate—Beta-naphthol-benzoate. Obtained by the interaction of beta naphthol and benzoyl chloride. It occurs as colourless, acicular crystals, darkening by keeping; soluble in alcohol, chloroform, nearly insoluble in water and ether. Dose—4 to 10 grs. It is a gastro intestinal disinfectant, intestinal antiseptic and diuretic. In the intestines it splits up into beta naphthol and benzoic acid, the latter of which is then eliminated by the kidneys. It is used in dysentery, intestinal catarrh, typhlitis and appendicitis. As an antiseptic and astringent it is given in typhoid and in dyspepsia and for preventing fermentative changes in the stomach; locally used to allay itching of pruritus senilis.

Benzo-para-cresol—Para-cresyl-benzoate.—Prepared by the actions of benzoyl chloride on sodium salt of para-cresol. Met with in colourless needles. Soluble in chloroform, ether, hot water; insoluble in cold water. Used as an antiseptic.

Benzosol—Guaiacol Benzoas—Benzoyl ester of Guaiacol—Benzosolum. To obtain it heat guaiacol with benzoic acid. A colourless crystalline powder, of a faint bitter almond-like odour and without any taste; contains 54 per cent. of guaiacol. Insoluble in water, soluble in alcohol, ether and chloroform. It is eliminated in the urine as guaiacol and benzoic acid. Dose—4 to 10 grs. in capsules. An agreeable substitute for creosote. As an anti-tubercular and intestinal antiseptic it is given in incipient stage of phthisis, also in diarrhœa of tuberculosis, and diabetes mellitus.

Betol—Naphthalol, Naphthol-salol—Naphtyl salicylate—Salicylate of beta-naphthol-ether. A compound like salol, but containing beta-naphthol in place of phenol. Obtained by the condensation of beta-naphthol and salicylic acid. White scales or crystalline powder, without odour or taste. Insoluble in water and glycerin; soluble in boiling alcohol, ether, benzene and oils. Dose—2 to 8 grains. As an antiseptic, antirheumatic, antizymotic and anodyne used in acute rheumatism with better results than those obtained from salol and other salicylates. Its chief use, however, is in putrid discharges from the intestinal tract, in gonorrhœal cystitis and other forms of vesical and intestinal catarrh. It is also recommended in acute rheumatism. In gonorrhœa, bougies (1 to 4) of betol have been used.

Bismuthi subiodidum—Bismuth subiodide—Bismuthi-oxy-iodidum—Bismuth-oxy-iodide. A heavy, brownish-red, amorphous powder, without any odour or taste, insoluble in ordinary media. Dose—2 to 4 grs. Used as an antiseptic like iodoform. Externally the dusting powder or ointment is applied on burns, on suppurating wounds, sores and ulcers. Injection of 1 per cent. in suspension is used in gonorrhœa. Internally it is given in dyspepsia, pyrosis, flatulence, typhoid fever and ulcer of the stomach.

Bismal—Bismuth-Methylene-di-gallate. A bismuth salt containing methylene and gallic acid. A greyish-blue bulky powder, soluble in caustic alkaline

solutions, insoluble in water or gastric juice. As an intestinal astringent given in tuberculosis and tubercular and protracted diarrhœa. Dose—1 to 5 grs.

Bismuthol—Bismuth-sodium—Phospho-salicylate. A greyish non-toxic powder Used as an antiseptic dusting powder with talc (1 in 4), or as an ointment with petroleum (1 in 4), or as an aqueous solution (1 in 40), externally for suppurating wounds and ulcers; as an injection in gonorrhœa and a wash for burns and scalds.

Bismutose.—A bismuth and albumen compound; equivalent to magistery of bismuth. Dose—15 to 30 grs. Used as an astringent, sedative and protective in irritable conditions of the digestive tract as hyperacidity, dyspepsia, vomiting, diarrhœa, in the ulcerated condition of the stomach, as in typhoid, dysentery, tuberculosis, &c.

Bitumen—A solid tar found on the shores of the Dead Sea, Trinidad, Barbadoes, &c.

Vernacular.—Arab.—*Hajar-ul-musa;* Guj.—Bomb.—*Silajita;* Eng.—*Asphaltum, Mineral pitch, Jew's pitch;* Pers.—*Momiai.*

Silajita literally means lac or exudation from rocks or stone. It is a kind of metallic earth, and exists as a dark, sticky and unctuous substance which melts easily with heat and burns sometimes without leaving any residue. Its taste is bitter; smell resembles that of cow's stale urine. It is supposed to be an exudation from bituminous rocks filled with petrified fossil deposits containing fish, or it is a mineral pitch or tar formed in the earth from the decomposition of vegetable substances. It consists of crude paraffin or petroleum, with iron and solid bitumen. It contains an oil which when distilled is known as ichthyol. Used as a paste and bhasm. To prepare *silajita paste*:—Macerate silajita in the juice of kadu nimado, gulavela, and ghee. To prepare *silajita bhashm*:—Take silajita 20, gandhaka 20, and haratala 10; mix together, triturate in the juice of bijorûn, and roast. Dose—1 to 2 grs. As an alterative, tonic, aphrodisiac, anthelmintic, diuretic the bhasm is given in retention of urine, scalding due to gravel, gonorrhœa, also in cough, consumption, &c. As a tonic it is often given in anæmia, general debility, diabetes, leucorrhœa, &c. As an abortifacient it causes uterine contractions and thus promotes expulsion of the fœtus. Its suppositories are used to remove ascarides from the rectum. The paste is locally applied to relieve rheumatic pains in joints, and used as an embrocation in paralysis, contusions, sprains, &c.

Boral—Aluminum Boro-tartrate. A fine powder soluble in water. Used as antiseptic and astringent dusting powder in skin diseases and in sweating in armpits and for fœtid feet.

Borobenphenene.—A combination of boracic acid, benzoic acid and phenol. A fine liquid, very volatile, of a pleasant odour and agreeable taste. It mixes freely with water, glycerin and alcohol. Used for inhalation or as solution. Dose—15 to 60 drops. It is a safe non-irritating antiseptic; it destroys bacteria and prevents its development. It also prevents decomposition of animal and vegetable matter. Very useful in diseases of the ear, nose and throat. In bronchitis its inhalation is very useful. Locally it is applied to wounds, ulcers, &c., and used as gargle, inhalation or injection. Internally it may be given as an intestinal and gastric antiseptic in diarrhœa, dysentery, &c.

Borophenol.—A combination of borax and carbolic acid in equal parts. A colourless liquid soluble in water. As an antiseptic and disinfectant used like carbolic acid.

Branalcane.—It contains boro-glyceride solution 30·8 per cent. in glycerin with resorcin 2 per cent., the whole coloured with rubin. Used as a paint or gargle or spray containing 1 in 50 of warm water. As an antiseptic, analgesic, the paint is applied in diphtheria, tonsillitis and thrush; as a spray or injection in ozæna, otorrhœa and leucorrhœa; as a wash in skin diseases, eczema, such as impetigo, tænia, favus, lichen and pruritis.

Brenzcain—Guaiacol benzyl ether. A combination of benzin with guaiocol in ether. In colourless crystals; soluble in alcohol and ether; used as artitubercular; but it is free from the caustic action of guaiacol.

Bromal Hydras—Bromal Hydrate—Tribromo-acetic-ortho-aldehyde. Oblique colourless crystals less soluble in water than chloral hydrate. Dose—2 to 5 grs. in pills. As a hypnotic it is superior to chloral hydrate, but apt to cause vomiting, pyrosis and diarrhœa; in insomnia it relieves pain and produces sleep; given to relieve intestinal and renal colicky pains. Locally applied it causes irritation and inflammation of the skin.

Bromalin—Bromethylformine—Hexamethylen-tetramin-bromethylate. In colourless flakes or white crystalline powder, easily soluble in water. Dose—10 to 30 grs. A nervine sedative, anti-epileptic, antaphrodisiac, antispasmodic, antiemetic and motor depressant; weaker than bromide of potassium. It leaves no disagreeable secondary effects of the bromides, no skin eruptions, nor intoxication. It does not interfere with the action of the kidneys and heart. Given in large doses in epilepsy. Also in priapism, cordee, &c. In spasmodic diseases as chorea, hysteria, hepatic or intestinal colic it is of benefit.

Bromidia.—An American nostrum, resembling liquor bromo-chloral compositus, containing in each fluid drachm chloral hydrate 15 grains, bromide of potassium 15 grains, extract of cannabis ¼ grain, extract of hyoscyamus ¼ grain. Dose—30 to 60 ms. Used as a hypnotic in insomnia due to nervousness, also in neuralgia, headache, mania, epilepsy, convulsions, delirium tremens of fever and in colic.

Bromipin.—A compound of bromine, potassium bromide and sesame oil; a substitute for alkaline bromides. Yellow oily fluid. Taste purely oleaginous; it is very easily absorbed. It leaves no secondary ill-effects of ether bromine preparations. Used as capsules 30 ms. in each. Emulsio bromipin contains bromipin in syrup or peppermint water. Dose—A tea spoonful or two. Nervine sedative, motor depressant and antaphrodisiac. It is exclusively assimilated in the intestines; used in the treatment of neurasthenia, insomnia, headache, morbid fevers and in disorders of the nervous system, as convulsions, epilepsy, &c.

Bromocoll—Gelatine dibromo-tannate, an organic bromine compound containing bromine, tannin, and gelatine; a substitute for alkaline bromides. Slightly yellow or colourless powder, without any odour or taste, insoluble in dilute acids or in the acid gastric secretions, but soluble in the intestinal juices or alkaline fluids, also in alcoholic fluids: hence not absorbed until it reaches the intestines. Dose—15 to 45 grs. in tablets. Used also as a dusting powder or ointment. As a nervine sedative and soporific it is internally given in neurasthenia (general or sexual), cardiac neurosis, vomiting, melancholia, epilepsy and uterine dysmenorrhœa. Like alkaline bromides it does not affect the heart; it never causes constipation. It is excreted through the urine. As a dusting powder it is applied to wounds, excoriations, sores, &c. As an ointment is used in pruritus, urticaria, and lichen to allay itching.

Bromoformum—Bromoform—Methyl-tri-bromide, tri-bromomethane. Prepared by the action of sodium hypobromide on acetone, or by the action of bromine upon a solution of caustic potash and methyl alcohol, or wood spirit, equal parts. A heavy, clear and colourless liquid, of a peculiar odour and sweetish taste of chloroform; very slightly soluble in water, freely soluble in alcohol, glycerin and ether; decomposes or darkens on exposure to the air. If it has colour it should be rejected as unsafe by reason of decomposition. Dose—1 to 5 ms. It is a local caustic, antispasmodic, motor excitant and nervine sedative. It depresses the heart as a sedative. It is given in epilepsy and to relieve gastric pains, vomiting and phthisical cough. In diphtheria its inhalation has been used with good results. In whooping cough its administration arrests vomiting, the expectoration becomes more free, bronchitis disappears, and violence of paroxysm is reduced to a minimum; as a spray or injection it is used in ozæna and applied locally to ulcers on the larynx.

Bromohæmolum.—A compound of hæmol and bromine. It contains 27 per cent. of bromine. As an alterative and blood tonic it is given in diseases of the lymphatic system, as scrofula, erysipelas, chronic skin diseases, &c.

Bromol—Tribromo-phenol. Obtained by the action of bromine on carbolic acid. Colourless soft white crystals, of a disagreeable bromine odour and sweet astringent taste; insoluble in water, soluble in alcohol, chloroform, ether, glycerin, alkaline solutions, fats and fixed and volatile oils. Dose—$\frac{1}{12}$ to 1 gr. Used as ointment (10 grs. in 1 ounce); emulsion, 4 per cent. in glycerin.

Actions and uses.—It is not dissolved by the gastric juice. As an intestinal disinfectant in minute doses it is used in infantile cholera, typhoid fever and diphtheria. The solution (1 in 25) is used as a paint in diphtheria; as a caustic it is applied to tuberculous ulcers, gangrenous sores and purulent wounds.

Bromopyrin—Mono-bromoantipyrin. A true chemical compound of bromine and antipyrin. White needle-like crystals, insoluble in water, slightly soluble in hot water, easily soluble in alcohol or chloroform. As an antineuralgic, antirheumatic and nervine sedative it is given in fever, articular rheumatism, &c. Dose—5 to 10 grs.

Butyl Chloral Hydras, B.P.—Butyl chloral hydrate—Croton chloral hydrate—Trichlor-butylidine glycol, tri-chlor-butyl aldehyde hydrate, chloral butylicum. To obtain it, pass chlorine gas through acetic aldehyde and distil. To the resulting butyl chloral add water and evaporate. Light white and pearly lamellar crystals, having a pungent fruity odour and warm, bitter and nauseous taste. Soluble in water (1 to 50), readily soluble in alcohol (1 in 1), glycerin (1 in 1) and in chloroform (1 in 20). Liquefies on mixing with menthol or antipyrin. Dose—As an hypnotic, 5 to 20 grs.; as an analgesic 2 to 6 grs.

Preparation.—Syrupus butyl chloral (1 in 30); Mistura butyl chloral, butyl chloral hydrate 4 grs., glycerin 15 ms., water 1 oz. As an anodyne given in neuralgia of the throat. Pilula butyl chloral cum gelsemina:—Butyl chloral hydrate 3 grs., glycerin of tragacanth q. s., gelsemine hydrochloride $\frac{1}{100}$ grs.; make 1 pill. In facial neuralgia.

Actions and uses—Analgesic, anodyne, hypnotic; less powerful than chloral. It does not depress the heart. As an anodyne it is given with glycerin in neuralgia of the throat. Combined with gelsemine $\frac{1}{100}$ gr. and glycerin it is given in facial neuralgia, in paroxysmal headache, hemicrania, tic douloureux, sciatica and migraine. Combined with antipyrin and cannabis it is given in gastric vomiting, dysmenorrhœa, neuralgic toothache and in toothache of preg-

nancy. Combined with phenol it is given with benefit in whooping cough and in irritative night coughs of phthisis and in hysteria.

Byne or Malt.—It is the dried grain or seed of barley in which the process of germination has been started by artificial means. It contains the ferment diastase. Bynin is liquid malt. A fluid essence of malt. Constituents.—Soluble albuminoids 20 per cent., maltose 23 per cent., dextrine, mineral matter, &c.

Preparations of Bynin—Byno-hypophosphites—Byno-phosphates—Byno-glycero phosphates—Byno-hemoglobin, &c. Dose—1 to 2 drs. as an emulsion. A nutritious tonic and digestive, given in anæmia, chlorosis, influenza, typhoid fever, scarlatina, measles, and in convalescence from acute diseases. Excellent restorative in severe prostration and emaciation, in insomnia and restlessness, in phthisis, in chronic albuminuria, &c.

Cactina.—Active proximate principle of cactus Mexicana. It is not cumulative and does not cause any depression, and is better borne than other antipyretics. When given with antipyretics, hypnotics and anodyne it averts their ill-after-effects. Dose—$\frac{1}{100}$ gr.; in pellets 1 to 2. As a heart sustainer and tonic it is indicated in febrile and nervous diseases, in cardiac and general muscalar relaxation, in palpitation, and in slow, irregular and feeble heart due to excess of tobacco, tea, coffee or alcohol.

Carbamide—Urea. Colourless dimetric crystal, soluble in water (1 to 1) and in alcohol. Dose—5 to 20 grs. Used as a diuretic, antiperiodic in gout, chronic kidney diseases and in ague.

Calcusol.—A combination of peperidene, parasulphamine benzoate and potash carbonate. As a solvent, given in uric acid gravel and uric acid diathesis, gout, &c.

Carbonis Tetrachloridum—Carbon tetrachloride. A heavy mobile-volatile liquid like chloroform, of a pleasant quincelike odour; used as inhalation and paint. As a sedative and anæsthetic it is inhaled in hay fever and locally painted over the painful neuralgic parts to relieve pain.

Celerina—A proprietary medicine. A compound preparation containing celery, kola, coca, viburnum and aromatics. Every fluid drachm contains 5 grs. of each drug.

Actions and uses.—Nervine tonic, stimulant and antispasmodic. Given in impotency, loss of nerve power, neuralgia, dysmenorrhœa, paralysis and hysteria. It is free from the depressing effects of alcohol, nitroglycerin and caffeine. Dose—1 to 2 drs.

Ceresin.—Obtained from ozokerit or earth wax by purifying the volatile portions of petroleum. It is a hard, white paraffin. Yellow ceresin is ceresin artificially coloured yellow.

Chinolinum—Chinolin—Quinolin—Leucolin. A constituent of coal-tar oil. Probably a combination of benzene and pyridine. Prepared synthetically from aniline or nitro-benzol by heating it with glycerin and sulphuric acid, or by a destructive distillation of quinine or cinchonine with potassium hydrate. It is a transparent, oily liquid, taste disagreeable, odour peculiar and penetrating; soluble in alcohol, ether, carbon bisulphide and oils, slightly soluble in water. It is colourless when fresh, but becomes dark-brown on keeping. With acids it forms deliquescent salts. Dose—3 to 10 ms. Used as an aqueous solution (1 in 50 of rectified spirit).

Chinolini tartras or quinolin tartrate occurs in silky, shining, non-deliquescent crystals; odourless or of a faint odour of bitter almonds; the taste is somewhat biting, but not bitter, resembling that of peppermint water. It is soluble in water (1 in 40). Dose—5 to 20 grs.

Chinolini salicylas—Chinolin salicylate.—Less soluble than chinolin tartrate. Dose—3 to 8 grs. Quinoline sulphate.—Dose 5 to 16 grs. Quinoline hydrochlorate used as solution 1 per cent., or pigment. Dose—5 to 15 grs.

Chinolin is antiseptic, germicide, febrifuge and antipyretic; 1 per cent. solution prevents the lactic acid fermentation and destroys the coagulability of blood. It is allied to quinine and resembles in action antipyrin, kairin, resorcin, thallin, &c. Given in malaria, pneumonia, typhoid and intermittent fevers, whooping cough, diphtheria and neuralgia. As a paint it is used in diphtheria; a solution is a good injection for gonorrhœa and is also used as a gargle in diphtheria.

Chinolin-sulpho-cyanas.—A yellow powder used as a solution for injection, and also as a paint and wash. Used as an antiseptic and deodorizer. It is superior to phenol. Under its use, pus, diptherin and cholera germs are destroyed. It is given in gonorrhœa, blennhorragia, &c.

Chinosol.—Potassium oxychinolin-sulphonate, Quinosol.—A derivative of chinoline. Prepared from cinchonine, also synthetically from aniline, &c.

Met with as non-toxic, non-irritant, lemon-yellow crystals or powder, of an astringent aromatic taste and saffronlike odour. It is non-volatile. Freely soluble in water, insoluble in ether and alcohol. Used with boric acid as a dusting powder, and as a solution (1 in 600) used as an injection. Dose—5 to 15 grs.

Actions and uses.—Antiseptic, bactericide, disinfectant and deodorant. As an antiseptic it is regarded as superior to carbolic acid or corrosive sublimate. It does not coagulate albumin. As a dusting powder it is applied to the throat in diphtheria, lepra and favus. It removes fœtid discharges and renders them healthy. As an antiseptic injection it is used in nasal and laryngeal affections, in gonorrhœa and gleet, leucorrhœa and in hepatic and other internal abscesses. In whooping cough a 1 per cent. solution is injected into the pharynx. Internally it is given in typhoid fever and in tuberculosis of the lungs associated with high fever, loss of strength, &c.

Chinotropine—Quinate of urotropine.—A combination of quinic acid 75 per cent. and urotropine 25 per cent. A white powder easily soluble in water. Taste acid. Dose—30 to 90 grs.

As a uric acid solvent it is given in uric acid concretions. It reduces the uric acid, while hippuric acid is excreted in considerably larger quantity. Given for gout, rheumatism and in uric acid diathesis.

Chionia.—Active principle of Chionanthus Virginica. Dose—1 to 2 drs.

A hepatic stimulant without catharsis. It establishes portal circulation.

Chloral Ammonia.—To prepare it, pass ammonia into a solution of chloral in chloroform, and evaporate. A white crystalline salt, insoluble in cold water. It is decomposed by hot water. Dose—5 to 20 grs. As a hypnotic it is given in insomnia, painful affections of the stomach, renal or hepatic colic, &c. It does not disturb digestion.

Chloralbacid.—A halogen albumen. A compound of chlorine and albumen obtained from cow's milk. It is a nourishing salt similar to many modern nutritive preparations. It is a brown resinous powder, of an acid reaction and with an unpleasant smell of fatty acids, insoluble in water. Used as cachets.—Dose 2 to 5 grs. It forms salt with sodium.

Chloralbacid sodium.—A purified salt in fine powder, soluble in water. Dose—1 to 2 grs.

Chloralbacid.—A gastric sedative; used in cancer and other painful diseases of the stomach. Chiefly useful when there is absence of free hydrochloric acid in the gastric juice. It is generally given after washing the stomach with a freshly prepared solution of common salt and soda. Chloralbacid-sodium is a gastric and intestinal tonic recommended in atonic dyspepsia and chronic gastritis. Also given in cases of malnutrition as chlorosis, cachexia and neurasthenia.

Chloralamidum.—Chloral formamide—Chloralamide—Chloralum formamidatum.—Obtained by the interaction of chloral anhydride on formamide. Shining, colourless crystals, without any odour and of a slightly bitter taste, decomposed in hot water or warm alkaline solutions: slowly soluble in water (1 in 20), and freely soluble in alcohol (2 in 3), ether and chloroform. Dose—15 to 45 grs.

Actions and uses.—Hypnotic, sedative and analgesic; it renders the breathing slower, quickens heart action and produces nervous excitement ending in sleep. It disorders co-ordination and diminishes reflexes. It is superior to chloral; it produces no bad after-effects, nor does it affect the heart, nor the digestive organs, nor cause headache nor create a habit. It is not cumulative. It differs from sulphonal in that chloralamide causes sleep soon after its administration: with sulphonal the patient has to wait for some hours. Sulphonal causes depression of the heart and the respiratory centre; chloralamide is free from these evil effects. Chloralamide as an analgesic is given to check or relieve the pain of gastric cancer of malignant liver and gallstones. In gonorrhœa and in chordee it is a very valuable remedy. In insomnia due to organic lesion of the heart, to spinal affections, to sweats of phthisis, to typhoid fever and chronic asthma, also in nervous affections as hysteria, chorea, sea-sickness, &c., it is an excellent remedy. Chlorobrom is given in sea-sickness and sleeplessness.

Chloralcyan Hydrate.—A combination of chloral hydrate and hydrocyanic acid. Fine crystals soluble in water, alcohol and ether. It contains 6·5 parts to 1 of hydrocyanic acid. Used as solution. As a sedative similar to hydrocyanic acid it is given to check gastric irritation, vomiting, &c.

Chloral Hydras, B.P.—Chloral hydrate—Trichlor-ethylidene-glycol—Trichloroacetic-ortho-aldehyde—Aldehydum-trichloratum—Trichlor aldehyde. Pass dry chlorine gas through anhydrous ethylic alcohol when an oily liquid (anhydrous chloral) is formed. Purify this by adding sulphuric acid and lime, and distil. Hydration is effected by adding water to the distillate and evaporating.

Characters.—Non-deliquescent, colourless plates or colourless rhomboidal loose crystals, like those of Epsom salt, of a pungent agreeable odour and a pungent bitter taste and neutral reaction; soluble 3 in 1 of water, freely soluble in ether and oils and fats; in alcohol (1 in 1) and in chloroform (1 in 3). It forms liquid preparations with about an equal quantity of carbolic acid, thymol, menthol and quinine salts. Becomes acid with water, and is decomposed with alkalies and is converted into chloroform and a formeate of the alkaline base. When heated it liquefies at first, then boils and volatilizes without residue.

Preparations—Chloral hydras cum camphora or pigmentum chloral et camphoræ. A clear syrupy liquid containing equal parts of chloral hydrate and camphor. It is permanently liquid at ordinary temperature. It is miscible with alcohol, carbon bisulphide, ether, olive oil and fat; insoluble in water or glycerin, with which camphor is precipitated. It forms a clear mixuret with chloroform (2 to 3) and dissolves the alkaloids, morphine, veratrine, atropine (1 in 30). It does not dissolve alkaloidal salts. As a sedative it is used locally

as a paint in neuralgia, rheumatism and applied over painful parts. With cocaine (1 in 10) it is used in toothache, due to dental caries. Internally it is given in mania and sleeplessness. Caffeine Chloral.—Colourless glistening scales, used hypodermically in 3 gr. doses in constipation, painful gastric distension, sciatica, rheumatism, &c. Syrupus Chloral, B.P.—(1 in 6). Dose—½ to 2 drs. Suppository of Chloral.—(1 to 2) of oil of theobroma cocao.

Liquor Bromo-chloral Compositus.—Similar to bromidia: contains chloral hydrate 160 grs., tincture of cannabis 40 ms., tincture of orange peel 40 ms., henbane juice 160 ms., syrup 3 drs., liquid extract of liquorice 24 ms., also of potassium bromide 160 grs. dissolved in distilled water 6 drs. and water to 2 ozs. Dose—½ to 2 drs. One drachm contains chloral hydrate and potassium bromide of each 10 grs.

Actions and uses.—Chloral keeps fibrin in the blood in a liquid form. As a hypnotic it is superior to chloroform, but less anæsthetic. Locally in a mild form it is antiseptic. The strong solution is irritant to the skin, and if applied for a long time produces vesication. Internally in medicinal doses it is at first a mild cardiac stimulant, then a cardiac depressant, dilates peripheral vessels and lowers arterial terision. It diminishes oxidation of blood and lessens blood heat. As an antispasmodic it generally produces soothing sleep without leaving any headache or general depression. In large or toxic doses it produces profound narcotism, loss of reflexes and complete relaxation of muscles and paralyses respiration and heart. The blood becomes more fluid, the leucocytes are greatly destroyed, and death occurs. Long continued use of chlora (choloral habit) produces marked muscular and general weakness, derangement of the heart, lungs and of liver, jaundice, slate-coloured fœces and insanity.

As a hypnotic it is usually given either alone or very often combined with opiates, or morphine, or bromides, but not with quinine with which it is incompatible, in tetanus, infantile, puerperal and other convulsions. In strychnine poisoning, in scarlet fever, acute mania, alcoholic delirium and in chorea it is given with benefit. As an analgesic it is inferior to opium, cannabis, &c. As an antispasmodic mixed with potassium iodide it is given in bronchial asthma, and as an antiseptic and sedative it relieves the pain of gastralgia. In high fever with great restlessness it lowers the temperature and prevents the coagulation of fibrin. It is used to relax the os uterii during labour and to relieve after-pains.

In children it is very useful in convulsion, chorea, whooping cough, diphtheria and laryngismus stridulus. Externally as a vesicant it is preferred to cantharides; sprinkled over adhesive plasters and then applied to the skin it produces a blister without causing any pain; its plug is applied to carious teeth and to relieve localized neuralgic and other pains. In alopecia and dandriff, a lotion (1 in 12) is used with benefit. In night sweats a lotion of chloral 1 dr. with 8 ozs. of brandy is used to sponge the body; a weak water solution is used as an injection in gonorrhœa, gleet; also applied to foul ulcers, fœtor of the feet, chapped nipples, &c. Hypodermic injection of chloral is useful in cholera, tetanus, hydrophobia, and in cases of extreme urgency as strychnine poisoning, arsenic poisoning and puerperal convulsions. It should not be given in inflammation of the stomach, to persons with weak or fatty heart, in atheroma in cases where the bronchii are chronically loaded with secretions, and in Bright's disease.

Chloral Imide.—Prepared by the action of heat on chloral ammonia. Colourless, tasteless needles, slightly soluble in water, sparingly so in alcohol and

freely in ether. With mineral acids it is decomposed into chloral and ammonia; not so with organic acids. Dose—4 to 8 grs. as an antipyretic; 5 to 30 grs. as a hypnotic. As an analgesic and hypnotic it is more powerful than chloral-amide.

Chloralose.—Anhydro-glyco chloral. Obtained by the action of anhydrous chloral on glucose. In small colourless crystals, of a bitter and disagreeable taste, soluble in ether, alcohol, and hot water, slightly soluble in cold water; used as capsules or cachets. Dose—3 to 10 grs. As a hypnotic, it reduces excitability of the gray matter of the brain, causes profound rest and dreamless sleep. There is no loss of consciousness, no irritation of the stomach or intestines. Specially given in epileptiform insomnia.

Chloralum.—Obtained by the double decomposition of aluminium sulphate and calcium chloride. A pale, yellow liquid or a dark solution similar in composition, but weaker than liquor aluminii chloridi, the colour is due to its containing some ferric chloride; used as an antiseptic. 10 ms. to 1 oz. of water forms a spray or gargle. Also used as a paint in diphtheria and sore throat.

Chloratol.—Prepared by the action of iodine on turpentine. A greenish-brown liquid; on exposure to the air it becomes darker and thicker. Insoluble in water, sparingly soluble in alcohol, and freely soluble in ether, turpentine, chloroform and acetone. Used as an antiseptic, either pure or as an ointment, in skin diseases, or mixed with collodion 10 per cent.

Chlorobrom.—Obtained by a combination of chloral amide and potassium bromide, each 30 grs., in one ounce flavoured with liquorice. Dose—½ to 1 oz. Used as a hypnotic and sedative in sea sickness and in insomnia.

Chloroformum—Chloroform, B.P.—Terchloride of Formyl—Trichloromethane—Di-chlormethyl chloride, chloride of bichlorinated methyl, methyl trichloride.—Chemically chloroform is formed by the substitution of three atoms of chlorine for three atoms of hydrogen in methyl hydride. Obtained by the action of chlorinated lime and slaked lime on ethylic alcohol and distilled water or on acetone. It may be obtained from chloral by decomposing it by an alkaline hydrate. Chloroform, B.P., has the sp. gr. 1·490 to 1·495 and contains about ½ per cent. by weight of ethyl hydroxide (alcohol), which prevents its decomposition. Absolute chloroform has the sp. gr. 1·5002. It decomposes on exposure to light and air and forms free chlorine and carbonyl chloride or phosgene. Commercial chloroform contains chloroform 98 per cent. and sundry hydrocarbons, aldehyde, hydrochloric acid, chlorine, &c.

Characters.—A diffusible, heavy, clear, colourless, mobile liquid, of a characteristic agreeable odour and a pungent sweet taste and neutral reaction; freely soluble in alcohol, ether, fixed and volatile oils, benzol or benzin, but very sparingly soluble in water (1 to 200). It does not mix with glycerine. It dissolves guttapercha, mastiche and most resins, also iodine, bromine and many organic alkaloids. It is a spare solvent of phosphorus and sulphur. It forms a good excipient for the salts of iron, soda salicylate, potassium bicarbonate, potassium chlorate, borax, &c. Dose—1 to 5 ms.

Preparations.—Aqua Chloroformi, B.P.—Chloroform water (1 to 400). Dose—4 drs. to 2 ozs. Emulsum Chloroformi—Emulsion of chloroform. Chloroform 4, almond oil 6, tragacanth 1½, water 100. Dose—1 to 6 drs. Linimentum Chloroformi—Chloroform liniment, B.P.—Chloroform 1, liniment of camphor. Spiritus Chloroformi, B.P.—Chloric ether (1 in 20) of alcohol. Dose—30 to 40 ms. Tinctura chloroformi et morphinæ composita, B.P.—Dose—5 to 15 ms. Ten minims contain morphine hydrochloride $\frac{1}{11}$ gr., chloroform $\frac{3}{4}$ m., diluted

hydrocyanic acid ½ m., tincture of capsicum ¼ m., tincture of Indian hemp 1 m., oil of peppermint $\frac{1}{16}$ m., glycerine 1½ m., and alcohol to make 10 ms. Linimentum Chloroformi Compositum. Compound chloroform liniment; it contains turpentine 2, chloroform 2, tincture of opium 1, and tincture of aconite ½. Tinctura Chloroformi Composita. Chloroform 2, rectified spirit 8, compound tincture of cardamoms 10 (1 in 10). Dose—5 to 60 ms. Cholroform capsules contain 10 ms. in each. Used in asthma. Chloroform and ethyl iodide capsules, contains 5 ms. of chloroform and 10 ms. of ethyl iodide in each, for inhalation. Chloramyl—Chloroform containing 2 drs. amyl nitrite to 1 lb.

Liquor Chloromorphiæ—Chloromorphia solution—contains chloroform 1·50 ms., glycerin 4 ms., liquid extract of liquorice 1 m., morphine hydrochloride $\frac{1}{11}$ gr., solution of atropine sulphate ½ m., oil of peppermint $\frac{1}{16}$ m. Mix, dissolve and add alcohol to 10 ms. Dose—5 to 15 ms. Resembles chlorodyne in active constituents.

Parson's Local Anæsthetic—contains chloroform 12, tincture of aconite 12, tincture of capsicum 4, tincture of pyrethum 2, Ol. caryoph. 2, camphor 2. Mix as a local application to painful parts.

A. C. E. mixture contains alcohol 1, chloroform 2 and ether 3.

Physiological action.—Antispasmodic, gastric and cardiac sedative, general anæsthetic, general anodyne, and anti-emetic; locally rubefacient and more powerful irritant than ether. It has direct action on the mucous membranes. If taken in large doses it causes narcotism followed by gastro-enteritis. In small doses it acts as a motor excitant. It should be diluted with air 96½ per cent. to produce anæsthesia with safety.

When inhaled, it produces at first rather an agreeable sensation; after a time there are noises in the ears, flashes of light before the eyes, a feeling of heavy weight upon the chest, throbbing of the carotids, and the pulse is heaving. Then the patient commences laughing or crying or there is incoherent speech with screaming. This stage is soon followed by one of comfort, the pulse becomes quiet, respiration easy, the consciousness is gradually lowered, answers questions incoherently; there is muscular excitement and struggles soon followed by complete insensibility and the relaxation of the muscles of upper and lower limbs. The reflex action is abolished, feeling of pain lost, and the pupils are contracted. The eyes not affected by light.

Therapeutics.—Locally it is used as a wash or a gargle, in affections of the mouth, gums, teeth and pharynx; also used as a vaginal plug to check uterine hæmorrhage. Internally as an antispasmodic it is given in cough, asthma, hysteria, colic and to relieve flatus. As an analgesic or sedative it is used to relieve indigestion and in gastric ulcer to relieve both pain and vomiting. Locally as an anodyne it relieves the pain and itching of mosquito bites, also the pain of neuralgias, toothache, headache, &c. As a cutaneous irritant it is used with various liniments; and if the vapour is kept confined on the skin it acts as a mild counter-irritant or vesicant. Combined with opium it is applied to the pit of the stomach to relieve hiccough, vomiting, gastralgia, &c. As a general anæsthetic by inhalation it is advantageously employed in asthma, in dyspnœa dependent on lung affections, emphysema, in cardiac asthma and in irritable cough of phthisis. It is also serviceable in puerperal convulsions. Opinions vary as to the superiority of this or that anæsthetic; however, in India it is most universally used. When there is an overdose (by inhalation) it depresses the heart, causing syncope and apnœa with stertorous breathing and cyanosis. The Hyderabad Commission appointed to investigate its effects have come to the conclusion that

death from choloroform inhalation is due to the arrest of respiration. In cases of prolonged operations morphine is sometimes hypodermically injected before the inhalation of chloroform, and sometimes when the heart is weak a dose of brandy precedes inhalation.

Chlorophyll.—The pure colouring matter of leaves to which alkaline carbonate is added to prevent decomposition. Soluble in alcohol or ether. Used for colouring medicinal agents.

Citrophen.—A very stable preparation. A combination of citric acid and paraphenetidin. A white acidulous and non-deliquescent powder. Soluble in cold water (1 in 40) or carbonated water. Taste pleasant and acid. Dose—3 to 8 grs.

Physiological action.—Antipyretic and anti-neuralgic, similar to phenacetin or lactophenin. Its favourable influence upon rheumatic affections is due to the citric acid present in it, whilst its antipyretic sedative and anti-neuralgic action is due to paraphenetidin. In the stomach it splits up into its component parts by the aid of gastric juice.

Therapeutics.—As a thirst reliever it is given in febrile diseases; as sedative it is given in deranged nervous conditions, in nervousness, hysteria, neurasthenia; in sleeplessness, influenza, acute infectious diseases; and in whooping cough, in myocarditis, and palpitation of the heart. In fever with symptoms of exhaustion, also in exanthematous fevers it is of great service. As an anti-rheumatic it is superior to soda-salicylate, and is given in odontalgia, lumbago, epididymitis, facial neuralgia, &c.

Cosaprin, a sulpho derivative of acetanilide. Freely soluble in water. Used as antipyretic. The action is very prompt.

Creosal.—Heat together beechwood creosote and tannic acid in equal quantities, and add gradually phosphorous oxychloride. A deep brown hygroscopic powder, soluble in water, alcohol, glycerin and acetone, and insoluble in ether and fatty acids. Dose—15 to 30 grs. As non-caustic astringent used in inflammatory throat and lung affections.

Creolin—Creolinum—Liquor Antisepticus, Jeye's disinfectant fluid, soluble phenyle. It is an emulsion of cresol with resin soap. A coal-tar product freed from carbolic acid. A dark-brown, syrupy alkaline liquid of a characteristic tar-like odour, soluble in alcohol, ether and chloroform, soluble in water (1 in 40), forming a milky emulsion. Removes the odour of iodoform. Dose—1 to 5 ms. Used as pills or as lotio creolin or emulsio creolin (1 in 100) of water. Lano-Creolin, 5 per cent.—A preparation of creolin and lanolin. Used for burns, wounds, abrasions, erysipelas, eczema and scabies. Creolin gauze 10 per cent.; creolin dusting powder 10 per cent. Crealbin—A combination of creolin and albumen resembling ichthalbin and tannalbin.

Actions and uses.—Non-toxic antiseptic, disinfectant, deodorizer, and styptic. A good substitute for carbolic acid and bichloride of mercury. Locally as a solution 2 per cent. it is used for wounds and ulcers, as an injection in cystitis with offensive thick urine, and in gonorrhœa. As a dusting powder with boric acid (1 to 10) it is used in otitis. As a parasiticide a 5 per cent. solution or the ointment is recommended for pediculi, eczema, erysipelas, scabies, burns, ulcers, &c. Given internally in thrush, diphtheria, dyspepsia, dysentery, diarrhœa and gastric catarrh.

Creosotum, B.P.—Creosote.—A mixture of guaiacol, creosol and other substances of a phenolic character as methyl, creosol, phlorol, &c.

Obtained during the destructive distillation of beech or wood tar with various other hydrocarbons.

Commercial creosote is an impure carbolic acid prepared from coal tar. It should not be used medicinally, as it is highly poisonous. Creosote is met with in two forms: hydrated creosote and anhydrous creosote. Hydrated creosote is prepared from beech wood. It does not become coloured by keeping, is miscible with oil of turpentine, and is freely soluble in water. It contains guaiacol and is used medicinally. Anhydrous creosote is prepared from pine wood, is liable to become brown by keeping, and forms a clear solution with oil of turpentine. Creosote is a colourless, inflammable, or yellowish heavy oily liquid, of a strong smoky or empyreumatic odour, an acrid taste, and neutral reaction; soluble in cold water (1 in 150), more so in hot water, soluble in alcohol, ether, chloroform, glycerin, benzin, carbon bisulphide, fixed and volatile oil, and glacial acetic acid. By the action of nitric acid it is converted into oxalic acid. It does not coagulate albumen and collodion. Dose—1 to 5 ms. Used as capsules and as inunction.

Preparations.—Aqua creosoti—creosote water. A 1 per cent. solution containing about 5 ms. in each ounce of water. Dose—1 to 4 drs. Emulsio creosoti contains creosote 5 ms., compound tincture of gentian and alcohol each 15 ms., liquid extract of liquorice 30 ms., water 1 oz. Dose—1 oz. Mistura Creosoti, B.P.—Creosote 1, spirit of juniper 1, syrup 30, water 480 (1 m. in 1 oz.) Dose—½ to 1 oz. Unguentum Creosoti, B.P.—(1 in 10). Creosote 1, hard paraffin 4, soft paraffin, white, 5. Vapour Creosoti.—Creosote 80 ms., light magnesium carbonate 30 grs., water 1 oz. Dose—A tea spoonful in 20 ozs. Pilula Creosoti.—Creosote 1, curd soap 1 in each pill. Dose—2 to 6 grs. Used for diabetes and dyspepsia. It should not be combined with oxide of silver, as there is a tendency to take fire. Oleo Creosoti.—A pale-brown oily liquid. An oleic ether of creosote, contains creosote (1 in 3). It is very easily assimilable. Dose—10 to 20 ms. Used in bronchial catarrh. Pulvis creosoti et amyli 10 ms. in 1 oz.—a dusting powder for erysipelas.

Physiological action.—Like carbolic acid, it is a depressant of the heart, of the respiratory and the nervous systems. It stimulates the bronchial mucous membrane, and is eliminated by the kidneys and lungs. In large doses it is a powerful poison, soon becomes absorbed, and appears in the urine. As an antipyretic, 20 ms. of creosote, used as an inunction over the chest, abdomen or armpits, cause reduction of temperature in a few minutes without causing collapse; hence used in malaria, pneumonia, typhoid fever, &c. As a gastric sedative and antifermentative it checks nausea and vomiting in sea sickness and in pregnancy. As an antiseptic it is given in flatulence, dyspepsia, carcinoma of the stomach, foul breath and fœtid stools. As an antipyretic, it is given either internally, or used as an inunction or hypodermically. As a stimulant of the bronchi and air passages, it is now freely used with tincture of capsicum to lessen cough and expectoration in pulmonary catarrh or phthisis. In pulmonary tuberculosis and in cases of diabetes given with cod liver oil it gives good results. It is supposed either to destroy turbercle bacilli or form soluble compounds with the toxins produced by them which are eliminated from the blood. The treatment must be continuous. As an astringent it is given in gonorrhœa, gleet, and in intestinal hemorrhages. As a local anodyne and antiseptic, its vapour or spray is used in syphilitic or other sore throats, diphtheria, ozæna and in chronic pharyngeal, laryngeal and pulmonary affections; also in fœtid breath and in gangrenous lungs. As a gargle it is effective in checking obstinate salivation. As an anæsthetic it is used to relieve the pain in toothache, depending upon caries of the teeth. As a parasiticide, its lotion or

ointment is applied in various skin diseases as eczema, pruritus, psoriasis, scabies, ringworm, scaly skin eruptions, &c. A solution of it (1 in 100) is applied over erysipelas.

Creosotal, Creosoti Carbonas—Creosote Carbonate.—A mixture of carbonates of guaiacol and creosote. It is prepared from beech wood. A light-brown oily liquid, without any odour and of a bitter taste ; soluble in oils, in cod liver oil (1 in 5), in alcohol and ether, insoluble in water. Dose—5 to 20 ms. As antitubercular it is given in tuberculosis, struma, &c.

Creosote Calcium Hydrochlorophosphate.—A mixture of creosote carbonate and dry calcium hydrochlorophosphate. A white syrupy mass. Dose—5 to 10 grs. As antitubercular recommended in phthisis and scrofula.

Cresalol—Cresol Salicylas—Paracresol salicylate—Paraphenylic ether of cresylic acid. Prepared by the action of salicylic acid on meta cresol and para cresol. Colourless, odourless, and tasteless crystals. Insoluble in water, freely soluble in alcohol. Dose—2 to 10 grs. Antiseptic same as salol. Used in rheumatism and cholera.

Cresin.—A solution of cresol in an aqueous solution of cresoryl acetate of sodium. A clear brown liquid containing 25 per cent. of cresol. As a disinfectant and deodorant used in surgery.

Cresols.—Ortho, Meta and Paracresols. The preparations creolin, lysol, saprol, salutol, sozol, &c., are complex mixtures of the three cresols.

Cresyl.—A compound containing creosote, heavy oils, cresylic acid 50 per cent., and naphthaline 20 per cent. A heavy oil, soluble in water. Solution from 5 to 10 per cent. is used externally as a non-toxic disinfectant.

Cristalline—Kristaline.—A form of collodion—contains pyroxylin 5, methyl alcohol 20, and pure amyl acetate 75. As a protective it forms a thin transparent film over abrased surfaces.

Cutol—Aluminium Boro Tannate.—It contains tannin 76, alumina 13·23, boric acid 10. A fine non-irritating powder, insoluble in water, soluble in tartaric acid. The solution is used as an antiseptic astringent and as a dusting powder over abrasions and wounds. The solution is used as an injection in acute gonorrhœa.

Dermatol—Bismuthi subgallas—Bismuth subgallate. A substitute for iodoform. To obtain it, dissolve subnitrate of bismuth in glacial acetic acid and add water. To the filtrate add solution of gallic acid, wash the precipitate and dry. It is an odourless yellowish-white powder, insoluble in almost all media, and non-poisonous. Dose—5 to 30 grs. Used as dusting powder or as 10 per cent. ointment. A powerful, non-irritant, antiseptic and dessicant. Externally used in cuts, wounds, ulcers, especially as a dusting powder alone or with starch. Internally as substitute for bismuth subnitrate, it may be given in gastro-intestinal affections as in dyspepsia and diarrhœa of tuberculosis and of typhoid fever.

Dextroform.—A compound of dextrin and formic aldehyde. A white powder readily soluble in water and glycerin. Properties similar to those of amyloform. Used as antiseptic solution 5 to 20 per cent. for injection in gonorrhœa ; superior to argonin.

Diabetin—Lævulose—Inverted sugar.—Fruit-sugar.—A white crystalline powder, freely soluble in water, sweeter than cane sugar. It is perfectly assimilated. Given in diabetes. No sugar has been found in the urine after its administration.

Diaphtherin—Oxychinaseptol.—A coal-tar product, in yellow crystals or powder, soluble in water, decomposed by alkalies or by the blood; liberating oxychinoline. Non-poisonous, antiseptic, deodorizer. Used as solution, 1 to 2 per cent., in affections of the ear or nose.

Diaphthol—Ortho-oxy-chinolin-meta-sulphonate, chinaseptol.—Non-irritant, whitish-yellow crystals, sparingly soluble in cold water. Used as an antiseptic like Loretin, a substitute for iodoform. As a dusting powder or an insufflation used in offensive discharges from the nose and ear.

Di-iodo-beta-Naphtol, Naphtol-aristol. Greenish-yellow crystals, very soluble in chloroform, sparingly soluble in alcohol, ether, acetic acid, insoluble in water. A nice antiseptic. A good substitute for iodoform.

Disinfectol.—A disinfectant like creoline, carbolic acid, or corrosive sublimate—a compound preparation containing resinous soap and soda; a compound of phenol, dissolved in hydrocarbons. A blackish oily liquid, forming an emulsion with water; used as a disinfectant to destroy bacteria.

Dithion—Sodii-dithiosalicylas—Dithiosalicylate of sodium.—A combination of sodium salt with dithiosalicylic acid which is prepared by heating salicylic acid with sulphur. Greyish or yellowish-white amorphous powder, soluble in water (1 in 1). Dose—3 to 10 grs. Used as a 20 p.c. solution to kill anthrax bacilli. As an antineuralgic, antiseptic, antipyretic and antirheumatic it is superior to salicylate of soda. Given in gonorrhœal or articular rheumatism, sciatica, &c., it reduces the temperature rapidly and is tolerated by the stomach and acts without producing unpleasant after-effects. It is less irritating than salicylic acid.

Diuretin—Theobromine sodio salicylate—Sodio theobromine salicylate—Theobromum natrio salicylicum.—It corresponds to caffeine sodio salicylate. To obtain it, mix together solutions of sodium theobromine and sodium salicylate; evaporate to dryness. It contains theobromine 49·7 per cent., salicylic acid 38·1 per cent. A white, non-toxic, amorphous powder, without any odour and of sweetish alkaline taste, freely soluble in warm water (1 to ½), becoming decomposed on exposure to the air from which it absorbs carbonic acid. With vegetable juices or acids it precipitates the alkaloid as a thick sediment, Used as a powder. Dose—5 to 15 grs. in cachets or as a clyster.

Actions and uses.—A typical diuretic. It acts entirely on the renal secreting epithelium and modifies blood pressure in virtue of its tonic effects upon the heart. It is used in cardiac and renal dropsy, angina pectoris, chronic cardiac dyspnœa with albuminuria, hepatic cirrhosis, œdema. In pleuritic effusion it is given with digitalis leaves, after tapping; the fluid does not re-accumulate.

Dionin—Hydrochloride of mono-ethyl ester of morphine.—A new derivative of morphine. It may replace codeine and morphine. A white crystalline powder, of a moderately bitter taste; soluble in water 14 per cent. and alcohol 15 per cent. It is more freely soluble than morphia hydrochlorate, peronine, heroin, and codeine hydrochlorate. Dose—Internally ⅓ gr.; hypodermically ¼ to ½ gr.

Actions and uses.—A sedative, given in affections of the respiratory passages. As a general anodyne and hypnotic it is superior to codeine; as a narcotic, a good substitute for morphine. It does not cause habitual craving, nor produce any poisonous symptoms if given in large doses. It is given in pertusis, phthisis, chronic bronchitis, pneumonia and emphysema of the lungs; under its use cough subsides, dyspnœa disappears, and asthma is relieved. As an analgesic and soporific it is given in dysmenorrhœa, parametritis, salpingitis; in chronic painful

chest diseases it relieves irritation and cough and produces sleep. It does not cause nausea and constipation, nor does it affect the digestive tract. Dionine is also given in the treatment of mental diseases. In masturbation it is injected subcutaneously in ½ to ¼ gr. doses to decrease the sexual stimulus and to lessen erections. In ophthalmic diseases affecting the cornea, iris and ciliary body and in hemorrhagic glaucoma dionine is very useful.

Dormiol—Di-methyl-ethyl-carbine-chloral.—A combination of chloral and amyl hydrate. A watery liquid, odour pungent, menthol-like; taste burning and cooling. Miscible with alcohol, ether, chloroform, benzole and fatty and ethereal oils. Used as solution, capsules hypodermically. Dose—5 to 30 ms.

Actions and uses.—Non-toxic. A good soporific like chloral hydrate; as a hypnotic it does not impair the action of the heart, respiration or vascular system. It is superior to sulphonal. Sleep induced by it is in 30 minutes, lasts from 5 to 8 hours, it is refreshing and unattended by unpleasant symptoms; given in melancholia, mental depression, hypochondriasis, epilepsy, chronic nephritis, &c.

Duotal—Guaiacol Carbonas—Guaiacol carbonate.—Obtained by the interaction of carbonyl chloride and sodium salt of guaiacol. A white crystalline powder, without any odour or taste; insoluble in water, soluble in alcohol, ether and chloroform, sparingly so in glycerine. Contains 91·5 per cent. of guaiacol. Dose—3 to 8 grs. It has no action on the stomach, decomposes on reaching intestine. Given in phthisis and typhoid fever, and in tuberculosis.

Dymal.—A desiccating antiseptic powder, non-irritant, non-poisonous; used as dressing for cuts, wounds, contusions, burns, &c.

Ecthol—Contains the active principles of Echinacea and Thuja, of equal strength. A liquid of a pale-yellow colour. Dose—1 dr.

Actions and uses.—Antipurulent. It corrects the blood dyscrasia which leads to the formation of pus in pyæmia, septicæmia and in tissue disintegration; also in typhoid fever, erysipelas, diphtheria, carbuncles, boils, gangrenous wounds, abscesses, &c. It is also a valuable application for stings of insects, bites of snakes, fresh cuts and pustular eruptions of any kind. It has found favour as a mouth wash or gargle in putrid apthous mouth and ulcerated sore throat.

Eka-Iodoform.—A compound of iodoform with paraform. Contains ·5 per cent. of Formaldehyde. This is added to increase its germicidal properties. Used as an antiseptic.

Enterol.—A mixture of the three isomeric cresols. A strong-smelling, colourless fluid. A solution (1 to 5000) in 15 to 80 ms. doses may be used as an antiseptic in gastric and intestinal affections.

Eosote—Creosoti Valerianas.—A fine substitute for geosote or guaiacol valerianate. Dose—3 to 10 ms. as a disinfectant given in intestinal disorders as fœtid stools, fœtid breath and in phthisis.

Epicarum purum—Pure Epicarin. A synthetic combination of naphthaline and saliform. A condensation product of naphthol, a derivative of salicylic acid. A pure white non-irritant powder, absolutely free from odour. As an emollient and parasiticide its ointment, 10 per cent., is used in parasitic skin diseases as scabies, prurigo and tinea tonsurans. It suppresses at once the intolerable itching.

Ergo Apiol.—A compound preparation of Apium Petroselinum, containing apiol, ergotin, oil of savin, and aloin, equal parts, in elastic capsules of 2 grs. each. Used in amenorrhœa, dysmenorrhœa, and in fœtid, scanty and retarded menstruation. Dose—1 to 2 capsules.

Erythol.—A double salt of bismuth and cinchonidine. This name is also given to a constituent which exists in lichens and algæ. As a stomachic it is given in dyspepsia with acid eructations and heartburn.

Erythrol Nitras—Erythrol nitrate, erythrol tetranitrate, erythrite tetranitrate, tetranitrin, nitro-erythrite.—To obtain it, dissolve erythrol in fuming nitric acid, add sulphuric acid and precipitate. Met with in hard colourless acicular crystals or plates, without any taste. Insoluble in water, soluble in alcohol (1 in 60). Very explosive on percussion. Dose—½ to 1 gr. in chocolate tabloids, the fat of the chocolate being a solvent of the nitrate.

Actions and uses.—Cardiac sedative, cerebral stimulant, vaso motor dilator and antispasmodic; less prompt but more enduring than nitroglycerin, sodium nitrite and amyl nitrite. An excellent remedy in angina pectoris. It prevents the recurrence of attacks and relieves the precordial pain. As a sedative it is given in lead colic, chronic Bright's disease, aneurism, cardiac or pulmonary dyspnœa, asthma, headache, &c.

Ethideni Dichloridum—Dichloride of ethidene, dichlor ethane, ethylidene dichloride, monochlor ethyl chloride, chlorinated ethyl chloride, chlorinated muriatic ether.—A bi-product in the manufacture of chloral; also obtained by heating aldehyde with phosphorus pentachloride. A colourless liquid similar in taste and odour to chloroform. Freely miscible in alcohol, ether and chloroform, soluble in water (1 in 300) isomeric with "Dutch liquid." As an anæsthetic it is more prompt and safer than chloroform or ether and less depressant to the heart.

Ethoxy Caffeine.—Treat caffeine with an excess of bromine and add alcohol. To the resulting monobrom caffeine add metallic sodium in pieces sufficient to combine with bromine and boil. Occurs in small white needles. Dose—1 to 4 grs. As a nervine tonic given in epilepsy.

Ethylene Periodide—Di-Iodoform.—A combination of acetylene periodide and iodine; occurs in golden needle-shaped crystals, without any odour. Insoluble in water, sparingly soluble in alcohol and ether, readily soluble in chloroform and benzene. Decomposed by light, by air iodine is set free. As an antiseptic it is used externally in place of Iodoform.

Eucaine.—Alpha Eucaine and Beta Eucaine are allied to and substitutes for cocaine. Alpha eucaine is an artificial alkaloid, a synthetic chemical compound. Less toxic than cocaine, a local anæsthetic, but if applied it causes some pain.

Alpha Eucaine Hydrochloride.—A benzoyl methyl compound of oxypiperidine. In small crystals, soluble in water (1 in 10). Used as a substitute for cocaine.

Beta Eucaine.—Allied to cocaine—only ⅓th the toxic effect of cocaine.

Beta Eucaine Hydrochloride—Eucaine beta hydrochlorate, hydrochloride of benzoyl vinyl-diaceton alkamine.—A white powder, soluble in alcohol (1 in 20) and in water (1 in 10); used as solution 1 to 5 per cent. Dose—10 to 20 ms. of the solution, Eucaine is a local anæsthetic, superior to cocaine hydrochloride. The solution is applied to the mucous surfaces; also used as a spray or plug to relieve irritation from the nose, throat and ear, and as an injection, 2 per cent., into painful and bleeding gums. Recently eucaine acetate, 2 per cent. solution, is used subcutaneously in eye diseases. It produces anæsthesia within 10 minutes.

Eudoxin—Bismuth Tetra-Iodophenol Phthalein.—A combination of nosophen with bismuth. It contains 52·9 per cent. of iodine and 14·5 per cent. of bismuth. A reddish-brown powder without any odour and without any taste. Insoluble in

water. Dose—3 to 8 grs. As an antiseptic given in stomach and intestinal disorders. Locally used as a dusting powder over foul ulcers, excoriations and sores.

Eugenoform.—Obtained by the interaction of eugenol and formaldehyde. Colourless flakes, freely soluble in water, sparingly soluble in alcohol and insoluble in ether. Dose—6 to 18 grains. As an antiseptic, bactericide and disinfectant of the gastro-intestinal tract it is given in cholera, typhoid and infectious fevers, intestinal and other catarrhs.

Eugallol.—A yellowish-brown syrupy fluid, soluble in water, alcohol, ether, chloroform and acetone. A powerful irritant. Mixed with acetone applied to the skin in psoriasis, lupus (after curetting), lichens, &c.

Eugenol—Eugenic acid—Caryophyllic acid.—Obtained by the action of solution of caustic potash on the essential oils of cinnamon, allspice, pimento, sassafras, &c., of which it forms a constituent. To obtain it treat the essential oil with caustic potash and distil off the terpene, and treat the residuum with an acid; also artificially prepared from phenol by some patented process. An oily, colourless liquid with a spicy odour of cloves and burning taste, soluble in alcohol, ether, chloroform, and solution of caustic soda; very slightly so in water. It becomes brown by exposure to the air and forms salts with caustic alkalies. Dose—5 to 10 grs. Used as unguentum eugenol.

Actions and uses.—A powerful antiseptic, antiputrescent, more powerful than carbolic acid and local anæsthetic. It reduces the sensibility of the mucous membrane, but not to complete anæsthesia. It is used by dentists as a local anæsthetic for its agreeable odour. As a febrifuge it is given in malarial fevers, but is inferior to quinine. Externally, an ointment of eugenol with lanolin is used in eczema and other skin diseases.

Eugenol Acetamid—Amide of eugenol acetic acid.—Obtained by the interaction of chlor-acetic acid and eugenate of sodium producing eugenol acetic acid; this being changed into ethylester, is next treated with alcoholic ammonia, giving eugenol acetamid. Occurs in needle-shaped crystals. As a dusting powder and as a substitute for cocaine, used as an anæsthetic and antiseptic in wounds, ulcers, &c.

Eugol.—An antiseptic liquid, containing boracic acid, and glycerin with alcohol and having the odour of hamamelis and thymol. Dose—½ to 1 dr. Used as a spray and a mouth wash in affections of the throat.

Eukelos.—Said to be a standardized and purified sedative solution of opium, free from narcotic and other noxious principles. It has an agreeable flavour. Used as a nervine sedative and intestinal astringent. Given in insomnia, diarrhœa in children, &c.

Eunatrol.—An excellent cholagogue. Given with benefit in gallstones in pills of 4 grs. each. Dose— 1 pill.

Euphorin—Phenyl urethane—Ethyl phenyl carbamate, carbanilic ether.—A compound related to acitanilide. Obtained by the action of chlor ethyl formate onaniline. A white crystalline powder or acicular needles, of a faint aromatic odour and clove-like after-taste. Sparingly soluble in water and freely soluble in alcohol and ether. Dose—3 to 6 grs.

Actions and uses.—Antipyretic, anti-rheumatic, parasiticide and antiseptic. Given in articular rheumatism, in fevers and painful neuralgias as headache, sciatica, &c. The fall of temperature occurs within 20 to 40 minutes. It is best administered in sherry wine to prevent collapse, cyanosis, &c. Externally used as a dusting powder in tinea favus and syphilitic ulcers.

Euquinine, Euchinin—Quinine ethyl chlorocarbonate.—Formed by the interaction of ethyl chlorocarbonate on quinine. In silky white needles or a slightly bitter powder, slightly soluble in water, soluble in alcohol, ether, and chloroform. Dose—5 to 15 grs. Used as a prophylactic in malaria and against the bites of anopheles mosquitoes. Like quinine it is given as preventive against malaria and also as a specific in whooping cough. It is regarded as a pleasant substitute for quinine.

Europhen—Iso-butyl-ortho-cresyl-iodide.—An iodine compound of ortho-cresyl. To obtain it treat an alkaline solution of iso-butyl-ortho-cresyl with a solution of iodide of potassium dissolved in a solution of iodine. Amorphous golden yellow powder and of a saffron-like odour, resinous to the touch, readily decomposes by heat, metals or starch, gives up its iodine freely to aqueous fluids. It is five times lighter than and as bulky as iodoform; soluble in alcohol, ether and chloroform and in fixed and fatty oils (1 in 4) and insoluble in water and glycerin, contains 28 per cent. of iodine. Used as a dusting powder or ointment, 10 per cent., with lanolin. It must not be combined with metallic oxides as mercury, zinc, nor with starch.

Actions and uses.—Like aristol it is non-toxic and non-irritant, dry antiseptic, germicide, bactericide. Liberates iodine by decomposing mucous surfaces. Used as a dusting powder or ointment in wounds, syphilitic sores, bed sores, ulcers, burns, eczema, psoriasis, chancre, &c., also in ear, nose and throat diseases and in gynæcological practice. Hypodermically its solution with olive oil (1 in 10) is used in tubercular leprosy.

Eurobin—Tri-acetate of chrysarobin.—A pale-brown powder of an acid taste, insoluble in water, freely soluble in ether, chloroform and acetone. As a de-oxidizer it is applied to the skin in ringworm and other parasitic diseases; generally combined with 1 to 20 of acetone, 1 to 5 of eugallol and 1 to 10 of saligallol.

Euresol—Resorcin mono-acetate.—Similar to pyrogallol and chrysarobin derivatives. An oily honey-like mass. Used as an inunction in the hairy parts of the body as psoriasis, eczema, &c.

Exalgin—Methyl acetanilide.—A benzene derivative allied to phenacetin. Prepared by the action of acetyl chloride on monomethyl aniline, or by the action of sodium acetanilide on iodide of methyl. Large acicular or tablet-like crystals with a slightly bitter taste, soluble in alcohol, slightly so in water (1 in 60). Dose—1 to 4 grs. Used as granular effervescing exalgin (1 in 60). Dose—1 gr. Mistura exalgin (1 in 96). Dose—2 to 4 drs. Pilulæ and Tabellæ.

Actions and uses.—As an analgesic it is superior to antipyrin, phenacetin and antifebrin; given in influenza, neuralgia, toothache, rheumatism, sciatica, cephalalgia, lumbago, chorea, epilepsy, &c. It is said to diminish the quantity of urine and sugar in diabetes. It is less dangerous than aconite, digitals, &c.; should not be given during the febrile state.

Exodyne.—It means out of pain. Contains acetanilide 90, sodium salicylate 5, sodium bicarbonate 5. Dose—3 to 10 grs. Used as an anodyne in painful nervous affections, headache, restlessness, &c.

Fermanglobin—Ferro manganese peptonate and hæmoglobin.—A combination of iron with hæmoglobin and manganese in the form of neutral peptonized albuminates. Highly assimilable. Does not constipate. Given in anæmia, chlorosis and leucocythema. Dose—½ to 1 dr.

Ferratin—Acid albuminate of iron.—A German speciality. A combination of albumen with tartrates of iron and potassium, with sodium carbonate. A

reddish-brown powder, without any taste or adour. Insoluble in water and dilute acid. Soluble in alkaline solutions; contains from 6 to 10 per cent. of iron. Dose—8 to 15 grs. Highly digestive, easily assimilated; given in anæmia and general debility.

Ferropyrin—Ferripyrin—Ferric chloride antipyrin.—A compound of ferric chloride and antipyrine. Occurs as dark red crystals or orange-red powder; soluble in water (1 in 5), boiling water (1 in 9), in alcohol, benzene and slightly in ether. It is not changed by exposure to air; contains 12 per cent. of iron, 24 per cent. of chlorine and 64 per cent. of antipyrin. Dose—3 to 8 grs. Used as solution 20 per cent. or injection 1 to 2 per cent. Hæmatinic, styptic and antineuralgic. Given in anæmia, chlorosis, migranic headache and neuralgia. Locally applied in bleeding from the nose and in tooth extraction. Injection of 1 to 1½ per cent. is used in gonorrhœa; 20 per cent. solution for hæmorrhages, local or internal.

Ferrostypin.—A substitute for ferric chloride. A yellow powder, soluble in water. It is not a caustic. As a styptic and astringent, used locally to check hæmorrhages from the nose, vagina, uterus, &c.

Formaldehyde.—Formic aldehyde—Aldehydum Formicum.—Pass vapour of methyl-alcohol over glowing coke, when alcohol is oxidized and a gaseous body is readily absorbed by water.

Formaldehydum Solutum.—An aqueous solution of formaldehyde known as formalin or formol. A colourless, neutral solution of a penetrating odour. It contains 35 to 40 per cent. of the gas. It has the special property of rendering glue insoluble.

Preparations.—Compounds of formicaldehyde with starch, dextrin and gelatin, respectively, are amyloform, dextroform and glutol. Used as antiseptic dressing for wounds, burns and ulcers. Formazol—A compound of formaldehyde 80 per cent. with iodoform, chloral hydrate, terpene and menthol. Used locally.

Actions and uses.—Formaldehyde is non-toxic, antiseptic; a powerful germicide disinfectant, deodorant and antihydrotic. As a germicide the solution, 1 or 2 per cent., is used in preserving wine, beer, meat, &c. As an antiseptic a 2 per cent. solution is used as a spray about the rooms and as a vaginal plug in puerperal septicæmia. Solution, 1 per cent., with glycerin is given in 5m. doses in chronic tuberculosis, in affections of joints, empyæma, and tuberculous abscesses; a 4 per cent. solution with 1 per cent. solution of cocaine is injected into the nose in ozæna and into the ear in otorrhœa with fœtid discharge. In corneal ulcers a very weak solution mixed with white clay is a useful application. In night sweats of phthisis the solution mixed with 50 per cent. of alcohol checks the sweats. In warts, sycosis, lupus, condyloma, carcinoma, a concentrated solution of formalin is employed as a corrosive with success. Formaldehyde tablet is ignited and the vapour inhaled for 15 or 20 minutes in whooping cough. In chronic pharyngitis, in irritation of the nasal cavity a 1 per cent. solution of phenosalyl, followed by inhalation of formaldehyde with menthol and chloroform is very useful. A 2 per cent. solution with glycerin is painted over the tonsils in tonsillitis. In skin diseases as favus and acne, also in alopecia areata, a 5 to 15 per cent. solution has a curative effect. In mosquito bites a solution of formaldehyde with spirit of wine (1 to 2) is applied with relief. Formazol is used in night sweats of phthisis, as an embrocation over the entire trunk.

Formanilide—Phenyl-formamide.—A coal-tar product. Mix together aniline and oxalic acid and distil. Colourless prismatic crystals, soluble in alcohol, glycerin and water. Decomposed by acids. Dose—1 to 4 grs. Used with starch

as a homostatic on bleeding surfaces, as a dusting powder, as an insufflation by an atomiser in throat affections. As an antipyritic, antineuralgic and analgesic it is given internally in malaria, neuralgia, articular rheumatism, &c.

Formin.—Urotropin—Hexamethylene tetramine—Aminoform.—An alkaline powder in crystals, soluble in water, slightly soluble in alcohol. Dose—5 to 15 grs. Given in lithia water. It is an uric acid solvent and diuretic. Given internally it liberates formaldehyde and acts as an antiseptic. Given in urinary calculi and to dissolve the uric acid concretions in gout, rheumatism, pyelitis, and cystitis with ammoniacal urine. In enteric fever it sterilizes the urine and rapidly renders it alkaline. Under its use putrid urine containing mucous, pus, uric acid, and amorphous urates is rendered normal in every respect. It also prevents the development of bacteria in the urine.

Fuchsine—Rosanlline mono-hydrochloride—Magenta ; Roseine—Anilin red.—A mixture of Para rosanilin and rosanilin hydrochlorides. To obtain it heat together dry arsenious acid 12 parts, anilin 10 parts ; dissolve in hot water ; add soda to form a precipitate, and re-dissolve the precipitate in acetic acid. Medicinal fuchsine is free from arsenic. Commercial roseine or fuchsine generally contains arsenic or aniline as impurities. Fuschine is iniridescent, dark-coloured crystals soluble in water—the solution being of a crimson colour. Dose—½ to 2 grs.

Actions and uses.—Antiseptic, antinephritic, and irritant of the gastro-intestinal mucous membranes. In large doses it causes trembling, and leads to fatty degeneration of the kidneys. It is eliminated in the urine and bile. Given with reduced iron in albuminuria, cancer, nephritis, cystitis and chronic contracted kidneys.

Fumigation de Chlore.—Contains sodium chloride 250, manganese di-oxide 250, water 500. Heat the mixture and add sulphuric acid 700. Sufficient as a disinfectant for the sick room of 1,000 cubic feet.

Gallacetophenone—Alizarin yellow—Tri-oxy-acetophenone.—A derivative of pyrogallol—one atom of hydrogen being replaced by the acetyl group. Fuse together a mixture of pyrogallol 1, zinc chloride 1·5, glacial acetic acid 1·5 ; add water, evaporate and crystallize. A powdery mass of a yellowish-brown colour. Soluble in alcohol, ether, glycerin, hot water, in cold water (1 in 600). A good substitute for pyrogallol. Used as ointment 10 per cent. or as solution 10 per cent. As an antiseptic it is used in psoriasis and other non-syphilitic skin affections.

Gallal.—Aluminium Gallate.—A combination of gallic acid and alum ; an insoluble powder. To render soluble gallate of aluminium combine it with ammonia. As an astringent dusting powder it is used in sore throat and relaxed uvula.

Gallanol.—Heat together tannin and aniline and treat the product with hydrochloric acid. In white crystals, sparingly soluble in water, soluble in alcohol and ether, and insoluble in chloroform. As a parasiticide and stimulant it is a good substitute for chrysophanic acid. Used as powder or ointment in skin diseases as mycosis, psoriasis, ringworm, favus, &c.

Gallicin.—The methyl ester of gallic acid. Light white silky crystals—slightly soluble in water. As a dusting powder used in catarrhal affections of the eye.

Gallobromol—Dibromogallic acid. Small, white, needle-shaped crystals ; non-toxic, soluble in luke-warm water (1 in 10), also in alcohol. The solution becomes brown on exposure to the air. Dose—5 to 15 grs. As a germicide and antiseptic it is used as solution 2 to 4 per cent. ; as an injection in

gonorrhœa, leucorrhœa, chordee and cystitis. Applied as a lotion in eczema. Internally given in place of alkaline bromides.

Geosote—Guaiacol Valerianas—Guaiacol Valerianate. A liquid combination of guaiacol and valerianic acid. Dose—1 to 3 ms. As an antiseptic given in tuberculosis and chlorosis.

Globinol—A hæmoglobin containing albuminate of iron, phosphorus and manganese. A crystalline powder containing all the important principles of the blood. Inodourous, without any taste; soluble in cold water, used as capsules or tablets 5 grs. each. As a gastric stimulant it is very rapidly absorbed into the blood. Used in anæmia, chlorosis, neurasthenia, rachitis, &c.

Glutol.—A combination of formic aldehyde and gelatine. A fine antiseptic varnish, adhesive and solid; forms, like collodion, a thin crust when applied to purulent wounds and burns. Under its use suppurating ulcers heal by first intention.

Glycerinum, B.P.—Glycerin—Glycerol—Trihydric alcohol with some water. A hydrocarbon from which 3 atoms of hydrogen are replaced by 3 atoms of hydroxyl. A sweet principle obtained from fats and fixed oils in which it exists in combination with fatty acids. These when acted upon by superheated steam or by an alkali, saponify and separate into glycerin and soluble soaps. A clear, colourless, oily fluid, without any odour and of a sweet taste, highly deliquescent, absorbs moisture from the air. It is soluble in water and alcohol. Insoluble in chloroform, ether and fixed oils, also in tannin, gallic acid, carbolic acid, salicylic acid, bromine and iodine. Hot glycerin dissolves metallic oxides, metallic salts and alkaloids. Dose—1 to 2 drs. Used as a clyster 1 to 2 ozs.

Suppositoria Glycerini, B. P.—Made withgelatine. Each containing 70 per cent. of glycerin.

Suppositoria cum Glycerino.—Contains sodium carbonate 15, glycerin 470, and stearic acid 25. Generally used in place of enema in chronic constipation. Glycerin jelly, containing gelatine 140 grs., glycerin 6 ozs., rose water 6 ozs., white of egg 6 drs. and salicylic acid 12 grs. Glycerinum Aluminis (1 in 6). Used as gargle, lotion or injection in chronic pharyngitis in children. Glycerinum acidi borici (3 in 10). Boro-glycerin—An equivalent of boro-glyceride which is a patent preparation. Glycerinum aluminis et acidi tannici contains alum 1, tannin 1, glycerin 6, astringent vaginal injection 1 ounce to a pint of water, also as pigment for the throat. Glycerinum Carmini—Glycerin of carmine—Contains carmine 3, solution of ammonia 4, water 3, and glycerin 18. Glyco-gelatin—Gelatin 1 oz., glycerin 2½ ozs., ammoniacal solution of carmine 15 grs., orange flower and water 2½ ozs. Used as a basis for making pastils by adding medicaments. Glyconin—Glycerinum Vitelli—Yolk of egg 45 and glycerin 55. Used for emulsifying oils. Glycerin Tinctures or Glyceroles.—Preparations of the same strength as the tinctures, but containing glycerin in place of spirit, *e.g.*, Glycerole or glycerine tinctures of nux-vomica, glycerole of ipecacuanha, &c. Glycerites.—These preparations contain glycerin instead of syrups and are for internal use.

Glycerinum Saponatum.—Neutral soda (soap) dissolved in glycerin; used as a basis for medicaments for the skin, *e.g.*, salicylic acid (1 in 2), resorcin and salicylic acid of each 5 per cent., creosote and salicylic acid, of each 5 per cent., salicylic acid and pix liquida 3 and 10 per cent., respectively.

Physiological action.—Commercial glycerin is irritant to the skin. It is antiseptic and abstracts water from the tissues. It is absorbed by the skin and mucous membranes, and is eliminated as formic and other acids.

Pure glycerin is nutritive, emollient, antifermentative and bactericide; when diluted it acts as a solvent. It retards or prevents putrefactive changes in the stomach and hence given in gastric derangements as acidity, pyrosis. flatulence, &c. As an antiseptic glycerin combined with sodium salicylate or with naphthalene, or with borax checks diarrhœa with offensive motions. It is useful in pulmonary affections and in wasting diseases. Glycerin with iodide of potassium is a good substitute for cod-liver oil. As a laxative it is given in combination with cascara and nux vomica generally in chronic constipation. It is a safe emetic for children. In adults often given to relieve pain and congestion of inflamed piles. Externally, as an assuager of thirst it is applied to the tongue in enteric fever; as an emollient and softening agent it is used in skin diseases. Glycerin with tincture of benzoin is applied to excoriated surfaces as cracks and fissures of anus or nipples and to chapped hands or lips. In otorrhœa it is used as drops, as a spray to the nasal mucous membrane, and as a paint in acute coryza. As clysters and as suppositories it is used in hæmorrhoids. As an anal injection with infusion of flax-seed it is used to relieve tenesmus in acute dysentery, also in constipation and in diarrhœa in children. In uterine diseases as a depleting agent, a plug of it is inserted into the cervix uteri to relieve congestion. Glycerin of tannic acid and glycerin of alum are useful astringents when used locally. The fumes are inhaled in sore throat and in distressing coughs. Glycerinum plumbi sub-acetatis or glycerin ointment is used in the treatment of eczema, tinea tarsi and also for small-pox pittings. Glycerin with mercuric iodide is good as a paint for corns. The chief use of glycerin, however, is in pharmacy. It is an ingredient for solutions for hypodermic use. It is used as a solvent for various alkaloids; with tragacanth it is used as an excipient for pills. It is used to preserve and aid digestive ferments as pepsin, pancreatin, and also to prevent decomposition of vaccine lymph.

Glycozone.—It is not a mixture, but a compound produce formed by the interaction of glycerin and 15 times its volume of ozone. It has an agreeable taste, but soon deteriorates. A very powerful oxidizing and healing agent. Used as a surgical dressing and as solution (1 in 10). Internally, as a gastric sedative, it is given in chronic gastric catarrh, pyrosis and in ulcer of the stomach. As an antiseptic dressing it is used for wounds, suppurating surfaces and for indolent granulations. The solution is used as a rectal injection in ulcers and fissures of the rectum. Dose—1 to 2 drs.

Glyco-Heroin Solution.—A preparation containing heroin, ammonium hypophosphate, hyoscyamus, white pinebark, balsam of tolu, glycerin and aromatics. Dose—1 dr. Used in coughs, bronchitis, phthisis, asthma, laryngitis, pneumonia and whooping cough.

Guaiacetin—A carboxyl substitution product of guaiacol. A fine powder, without any disagreeable taste or odour. Dose—8 to 15 grs. Used as tablets.

Actions and uses.—Tonic, antiseptic, anti-tubercular. A good substitute for creosote, guaiacol, and their preparations; given in chronic pulmonary tuberculosis, causes no gastric disturbance. Under its use appetite improves, assimilation and the production of fat and albumen are increased. In hectic fever and in night sweats of phthisis it is very beneficial. Often combined with eucasin.

Guaiacolum Guaiacol—Pyrocatechin-mono-methyl ether—Methyl ether of pyrocatechin.—A principal ingredient in beech creosote, which contains about 60 to 90 per cent. of guaiacol. To obtain it distil beechwood tar, treat the distillate with ammonia to remove acid compounds, and re-distil. It may also be

obtained by the destructive distillation of guaiacum resin. Pure guaiacol is in prismatic crystals, without any colour. Medicinal guaiacol is a colourless, limpid, oily liquid, highly inflammable, taste and odour more agreeable than that of creosote, soluble in alcohol, ether, fats, oils and glycerin, but slightly so in water (1 in 200). Dose—1 to 5 ms. Used as pearles containing 2 or 3 ms., as capsules containing 5 ms. dissolved in oil. Injectio guaiacol hypodermica contains guaiacol 5 per cent., iodoform 1 per cent., sterilized olive oil, almond oil or liquid paraffin 94 per cent.

Physiological action.—Antitubercular, antiseptic, antizymotic, local analgesic and anodyne. Like creosote it is an irritant to the stomach, but less irritant to the kidneys and intestines; hence preferred for internal administration to creosote.

Therapeutics.—As an antiseptic it is given in coughs and in the early stage of phthisis; as an antipyretic in fever, in hyperpyrexia of malaria, of pneumonia, &c.; as an intestinal antiseptic, in intestinal tuberculosis and in diarrhœa of fevers. As an inunction (1 to 8 of glycerin) guaiacol cinnamate is used in gonorrhœa and vesical catarrh. An hypodermic injection of guaiacol 5 per cent. and olive oil 95 per cent. is used in the extraction of teeth. With iodoform 1 per cent., guaiacol 5 per cent. and sterilized olive oil or liquid paraffin 94 per cent. it is injected in tuberculosis with benefit. It lessens cough and expectoration, diminishes the number of bacilli in the sputum, favours cicatrization of lung cavities, and lessens fever and night sweats. As an anæsthetic it is used like cocaine for the relief of pain in orchitis, of sciatica, rheumatism, &c. It is rapidly absorbed by the skin and in a short time is eliminated by the kidneys. As an inunction it is used over the skin of the thigh, chest or abdomen; it causes rapid lowering of body heat, and hence in malarial fever, pneumonia, typhoid fever it is locally applied with benefit. Like other antipyretics it leaves no bad after-effects.

Guaiacol Carboxylic Acid.—A compound of guaiacol-sodium and carbon dioxide. A white powder, slightly soluble in water, of the odour of creosote; taste bitter, nauseous and astringent. As an antiseptic and antipyretic it is given in fever, laryngeal, cough, &c.

Guaiacyl Calcii—Guaiacol mono-sulphonas.—A greyish white powder, freely soluble in water and alcohol, insoluble in fatty oils. Of an aqueous solution (5 to 10 per cent.), 5 to 6ms. is used as a non-irritant antiseptic and local anæsthetic. Better than guaiacol and used as a subcutaneous injection in dental and other operations.

Guaiacol Phosphas—Guaiacoli Phosphate.—Colourless crystals, without any odour or taste. Insoluble in water, containing 90 per cent. of guaiacol. As antitubercular it is given in tuberculosis of the lungs. Dose—5 to 10 grs.

Guaiacol Salicylas—Guaiacol Salol.—A white, insipid, crystalline powder analogous to salol; soluble in alcohol, ether and chloroform; insoluble in water. As an intestinal antiseptic, antitubercular and antirheumatic it is given in phthisical diarrhœa, dysentery, rheumatism, chorea, marasmus, &c. Dose—10 to 30 grs.

Guaiaperol—Piperidinæ Guaiacolas—Piperidine guaiacolate.—Contains piperidine and guaiacol combined. Non-irritant, colourless granules or crystals. Odour resembling that of creosote. Soluble in water (1 in 30), freely soluble in alcohol. Solution decomposed by mineral acids and alkalies. Dose—5 to 30 grs.

Actions and uses.—Antitubercular and antiseptic, given in tuberculosis of the lungs. Under its use appetite increases, weight also increases, night sweats cease, fever and cough subside. It combines the antiseptic properties of guaiacol with the vascular tonic action of piperidine.

Guethol.—Prepared from guaiacol by replacing the methyl radical and substituting the ethyl. An oily liquid, soluble in ether, alcohol and chloroform. Insoluble in water and glycerin. Dose—1 to 5 ms. As an analgesic and antitubercular it is given in tuberculous diseases.

Hæmol and Hæmogallol.—Products of the reduction of the colouring matter of the blood. Hæmol, a blackish powder, obtained by the action if zinc. Hæmogallol, a reddish-brown powder, by means of pyrogallol. It is a reduction product of Lematin Hæmol, combines with metals and forms arseno-hæmol which contains 1 per cent. of arsenic, cupro-hæmol, zinco-hæmol, and ferro-hæmol. Hæmolum bromatum contains 27 per cent. of bromine; hæmolum iodatum 16 per cent. of iodine. Iodo-mercurohæmol contains 12·35 per cent. of mercury and 28·6 per cent. of iodine. Dose of hæmol—2 to 8 grs. Hæmol and hæmogallol are more easily converted into blood colouring matter than any iron preparation. Hæmatinic, antichlorotic and tonic. Given in anæmia, chlorosis, neurasthenia. Bromo-hæmolum is very useful in hysteria and epilepsy. Iodo-hæmolum is used in secondary and tertiary syphilis, scrofula, asthma, psoriasis, &c. Mercuro-hæmolum is given in syphilis. Cupro-hæmolum is given in cholera, dysentery, diarrhœa in children and in scrofula, tuberculosis, &c.

Hedonal—Methyl-propyl-carbinol-urethan.—A powder insoluble in water, used as tablets. Dose—10 to 30 grs. It is an active but harmless hypnotic given in insomnia, neurasthenia and hypochondriasis. Inferior to trional, sulphonal, chloral hydrate, amylene hydrate, &c.

Helcosol—Bismuthi Pyrogallas—Pyrogallol Bismuth.—Contains 60 per cent. of metallic bismuth. An amorphous powder, colourless and tasteless. Insoluble in water and alcohol, sparingly soluble in dilute hydrochloric acid. As disinfectant given in infectious diseases of the intestines as in diarrhœa with fœtid stools. Dose—2 to 8 grs.

Heroin—Morphine Diacetas—Di-acetic ester of Morphine.—A morphine derivative in which the hydrogen atoms of the hydroxyl group are replaced by acetyl group. A white crystalline powder, almost insoluble in water, freely soluble in alcohol. Insoluble in ordinary solvents, but dissolves in acetic or dilute nitrohydrochloric acid and form salts. Used as pill or powder. Dose—$\frac{1}{12}$ to $\frac{1}{4}$ of a gr.

Hydrochloride of Heroin.—A neutral heroin salt; soluble in water. Solution, 2 per cent., used for hypodermic injection. Dose—$\frac{1}{12}$ to $\frac{1}{4}$ of a gr.

Glyco-Heroin.—A solution of heroin in glycerin. It contains, besides glycerin. ammonium hypophosphite, hyoscyamus, white pine bark, balsam tolu, aromatics. Dose—1 dr.

Heroterpin.—An elixir of heroin and terpin hydrate. Contains terpin hydrate 2 grs. and heroin $\frac{1}{12}$ gr.

Actions and uses.—A good substitute for morphine and codeine, having a marked sedative influence on the respiratory apparatus; under its use the number of respirations is diminished, but the duration of inspiration is prolonged. As a sedative a 5 per cent. solution removes local laryngeal irritation and cough. An intralaryngeal injection of 2 ms. of 5 per cent. solution is sufficient in laryngeal phthisis to suppress dysphagia and the pain during swallowing. It diminishes cough, dyspnœa and bronchial troubles. It is useful in emphysema, tuberculosis, &c. Its narcotizing effect is slighter than that of morphine or codeine. With bromoform it is given in whooping cough, angina, tuberculous laryngitis, pharyngeal affections, trigeminal or intercostal neuralgia, sciatica and muscular rheumatism. In them its effects are more palliative than that of

morphine. Like morphine it does not interfere with digestion. It does not cause constipation and is active even in smaller doses. As glycerin plug and suppository it is used in parametritis and perimetritis. Glyco-heroin is given in bronchitis, phthisis, asthma, laryngitis, pneumonia and whooping cough.

Hesol—Sodium cinnamate—Cumamylate of sodium.—Synthetically prepared it is a white crystalline powder, soluble in water. Dose—¼ to 1 gr. Used as a sterilized aqueous solution, 1 in 20 of water for hypodermic injection. Dose—2 to 12 ms. A valuable remedy in the treatment of tuberculosis, and as an intravenous injection in phthisis, lupus, &c.

Heto Cresol—Cinnamyl-metacresol.—A white crystalline powder, insoluble in water, oil or glycerin; sparingly soluble in alcohol. Freely soluble in ether. Mixed with iodoform (1 to 9) it is used as a dusting powder, as insufflation or spray, as injection, the solution containing hetocresol 2, iodoform 1, water 8. Dose—8 to 20 ms., given internally or hypodermically. As an astringent and antiseptic the powder is used in excoriations and wounds; as a dressing, mixed with iodoform and iodol (2 to 1) used for ulcers. The solution is used hypodermically in tuberculosis.

Holocain—Para-diethoxy Ethenyl-diphenyl amidine.—A synthetic product, obtained by the interaction of phenacetin and paraphenetidin; occurs as crystals. It has an alkaline reaction, and with acids it forms salts. It is insoluble in water. Halocain hydrochloride is in white needles, easily soluble in boiling cold water (2½ per cent.), and alcohol (1 in 6); used as a solution (1 per cent.) for the eyes. It produces anæsthesia in 1 or 2 minutes.

Hydracetin—Acetyl phenyl hydrazin.—A crystalline powder without any odour or taste, soluble in water (1 in 50), freely soluble in alcohol. Used as ointment (1 in 10). A powerful antipyretic; given to relieve rheumatism of the joints. Dose—½ to 2 gr. Ointment is useful in psoriasis. Pyrodin is an impure preparation containing 25 p. c. of Hydracetin.

Hydronaphthol.—A derivative of coal tar, belonging to the phenol series. A proprietary preparation corresponding to B. naphthol. A non-irritating, non-poisonous greyish-white crystalline powder, with a slight iodine odour; soluble in alcohol glycerin, fixed oils (1 in 20), in cold water (1 in 1100), hot water, (1 to 100). Dose—2 grs. Used as powder, wool, gauze, as a lotion (1 in 100), or a wash in warm water (1 in 300). The wash contains hydronaphthol 2, alcohol 2, and glycerin 8; an ointment containing hydronaphthol, oxide of zinc equal parts with 1 to 50 of lanolin. As an antiseptic it is said to be 14 times stronger than carbolic acid, 30 times more so than salicylic acid, half as powerful as or next to corrosive sublimate, 60 times more powerful than boric acid, and 600 times stronger than alcohol. Used for washing out septic cavities and wounds, also in skin diseases. Internally, as an intestinal antiseptic, it is used like B. naphthol; in diarrhœa, dysentery, cystitis and dyspepsia with fœtid breath. In tinea tonsurans plaster or a 5 per cent. ointment of hydronaphthol is very useful.

Hydro-Quinone— Hydro-chinon—Quinol — Para-di-hydroxy-benzene — Pyrogentisic acid, isomeric of resorcin and pyrocatechin.—Usually obtained from coal-tar. Also obtained by the interaction of aniline bichromate of potash and sulphuric acid, the resulting quinone or quinic acid being treated with acid sodium sulphite. Prismatic crystals non-irritant, soluble in hot water, ether and alcohol, also slightly soluble in cold water (1 in 25), slightly so in olive oil. Neutral, nodourous, and of a sweet taste. Dose—½ to 5 grs. Antipyretic and antiseptic, more powerful than resorcin; in eye operations causes no irritation injected hypodermically.

Hydroxylamine—Oxy-ammonia.—Formed by the action of nascent hydrogen on nitric acid or by the reduction of ethyl nitrate. A neutral base only known in aqueous solution, odourless and colourless. Has strong reducing properties. Hydroxylamine hydrochlorate.—Large hygroscopic crystals, with an acid taste and reaction, freely soluble in water and alcohol. It is a powerful irritant and should be used with care. Used as a solution (1 in 1000) of equal parts of glycerin and alcohol. Hydroxylamine is a most powerful antiseptic (1 in 5000), entirely preventing fermentation. A powerful poison to low organisms and has strong reducing properties. A good substitute for pyrogallic acid and chrysophanic acid. It does not stain the skin. If long continued it leads to hæmaturia on account of destroying red blood corpuscles. The solution of hydrochloride is used as a pigment in ringworm, sycosis, psoriasis, lupus vulgaris, herpes, tinea tonsurans, &c.

Hypnal—Mono-chloral antipyrin—Trichloraldehyde-phenyl-di-methyl-pyrazole.—A coal-tar derivative. To obtain it mix together solutions of antipyrin and chloral hydrate. The solution becomes a milky, oleaginous fluid, and crystallizes. Colourless crystals, without any odour or taste, non-irritating to the mucous membranes; soluble in cold water (1 in 15), and in warm water (1 in 6). As a hypnotic and analgesic or sedative it combines the action of chloral and antipyrin. Useful in insomnia due to pain and also for relieving spasmodic cough. Does not cause any gastric disturbance. Dose—10 to 15 grs. in catchets.

Hypno-acetin.—A compound of hypnone (acetophenone) and amido-phenol. A fine powder, soluble in alcohol and ether. Used as an hypnotic and antithermic. It combines the action of hypnone and amidophenol. Dose—3 to 5 grs.

Hypnone—Phenyl-methyl-acetone — Acetophenone — Acetyl benzene—A colourless, slightly yellowish oily liquid. Taste peculiarly pungent and persistent; odour of almond and orange blended. Insoluble in water, soluble in glycerin (1 in 70). Freely soluble in alcohol, ether, olive oil and chloroform. Used in capsules. Dose—1 to 5 ms.; as inhalation 2 to 8 ms. Given in capsules with almond oil as almond emulsion or with syrup.

Actions and uses.—Hypnotic; caustic to the mucous membrane of the mouth, and should not be used hypodermically. As a hypnotic it is given in nervous affections, in insomnia not due to pain, and as an inhalation in phthisis.

Ichthyolum—Ichthyol—Ammonii-sulpho-ichthyolas—Ammonium-sulpho-ichthyolate—Sulpho-ichthyolate of ammonia.—An oily substance, obtained by the destructive distillation of European bituminous rocks, or from certain petrified or fossil deposits containing fish, and which occur in the Tyrol. The oil is saturated with sulphuric acid, forming ichthyol sulphonic acid, and neutralized with ammonia. It is a viscous reddish-brown bituminous substance in appearance and consistence, similar to bitumen or to purified coal tar. Odour disagreeable, of an alkaline reaction; soluble in water or in a mixture of alcohol and ether, miscible with glycerin, oils, fats, lanoline and vaseline. It contains about 15 per cent. of sulphur in combination with oxygen and carbon. Dose—10 to 25 grs. Used as tablets, 4 grs. each.

Capsules of ammonium Ichthyol 4 grs. each. Capsules ichthyol lithium 4 grs. each. Dose—1 or 2. Ichthyol liniment contains ichthyol 4 drs., chloroform 8 drs., spirit of camphor 8 drs. Ichthargan contains silver 30 per cent. Ichthyol pigment contains ichthyol chloroform crysarobin and salicylic acid. Ichthyol ointment 1 to 5 of linolin. Collodium ichthyol 1 in 8. Ichthyol soap used externally in dermatitis. Solution of ammonium Ichthyol contains 10 to 30 per cent.

It is a mixture of ichthyol with ammonia water, alcohol and ether equal parts. Ichthyol paste consists of starch 40, ichthyol 40, water 20, and albumen 1, or of ichthyol 25, in carbolic acid 2½ dissolved in water 22½ and starch 50. Ichthyol inunction 10 per cent.

Preparation.—Ichthyol forms preparations with sodium, lithium, iron, zinc, mercury, &c. Ichthalbin Ichthyol albuminate contains ichthyol 75. A greyish-brown powder without any odour or taste, soluble in alkaline liquids, insoluble in water, ether, chloroform, alcohol and diluted acids. Dose—10 to 30 grs.

Physiological action.—Alterative, anodyne anti-emetic, antiphlogistic, antirheumatic, antisyphilitic, styptic, antitubercular. It is dissolved only in the intestinal secretions, but passes unchanged in the gastric secretions. As a styptic it contracts the vessels, controls inflammation, causes absorption of the effused products, and promptly alleviates pain and tension. It reduces the temperature, relieves restlessness and procures sleep. Owing to its containing sulphur it forms certain albumins, lessens the formation of waste products and often promotes nutrition of the body. The sulphur is eliminated by the skin.

Therapeutics.—Internally, ichthyol or ichthalbin is used in neuralgia, lepra tuberculosis, phthisis, scrofula, chlorosis, rheumatism, &c. Also in catarrh of the bile ducts and in gastric catarrh. In bromidrosis, in seborrhœa of the face and in acne rosacea, ichthyol ointment, 20 to 50 per cent., with lanolin is very useful. In gonorrhœal rheumatism ichthyol spray, 10 per cent. or ichthyol vasogen rubbed gently over the joints diminishes swelling and exudation. A solution (10 to 25 per cent.) is used in eczema, psoriasis, &c. Ichthyol, 10 per cent., with ether and collodion, is applied with a brush over erysipelas, over the temples in neuralgic headache and tic doloureux. In pemphigus contagiosus, lichen, urticaria, erythema, in sycosis a 10 per cent. soap has good effect. Condylomatas, keloids and warts fall off under its paint, leaving no scar. In syphilitic and other chronic ulcers of the leg and in leprosy, its ointment in combination with chrysarobin, 5 per cent. each with 2 per cent. of salicylic acid, destroys the germs of the disease. In ovaritis, in uterine carcinoma, in fissured nipples, in erosions of the cervix and in pruritus of the genitals, ichthyol acts as a charm. As a gargle the solution is used in sore throat and in whooping cough. In tonsillitis, the tonsils are painted with ichthyol paste. In scarlet fever a 5 per cent. ointment is used as an inunction to relieve itching. In the caries of the teeth, a drop of ichthyol and chloroform placed in the hollow of the tooth gives instant relief. In hemorrhages following extraction of the teeth its insertion into the cavity checks bleeding. In chilblains and chapped hands, liniment of ichthyol with turpentine give good results. In anal fissures and in burns and scalds applied with cocaine, it gives relief. Solution of ichthyol alone or with starch and egg albumen is a very useful application against stings of bees and wasps, and in bites of mosquitoes. To prevent bites the skin should be besmeared with lotion of acetic ether 1, eucalyptol 2, Cologne water 2, and tincture of pyrethrum 10. In paretitis, or mumps, an ointment of ichthyol 4, iodide of lead 4, chloride of ammonium 3, and lard 40 is very useful. In acute gonorrhœa a solution, 1 to 5 per cent., is used as an injection with relief. In prostatitis, suppositories of ichthyol are of benefit. In typhus fever under the use of ichthyol ammonia bath, the temperature falls, respiration becomes quieter and the pulse improves. Under its use hæmoglobin in the blood increases and also the leucocytes.

Echthyol iron is very useful in urticaria, lichen, purpurea, pemphigus, and chronic eczema; also in anæmia and chlorosis.

Ichthargan has absorbing, antiphlogistic and antibacterial properties. Injection of ½ to ¾ of a grain in water (6 ozs.) is used in the treatment of gonorrhœa. In prostatic cystitis, 3 per cent. solution is used as an irrigation. Locally it is applied in chronic ulcers of the leg.

Iodolbacid—Iodide of albumen.—A mixture of albuminoids with iodine. A yellowish powder without any odour or taste, contains about 11 per cent. of albumin in molecular combination with iodine. As an antisyphilitic it is very useful in gummata, tertiary ulcerations, &c. In goitre, where organo-therapy has failed, in pericarditis, pleuritis, in serous inflammatory exudations, in scrofulous enlargements of cervical or other glands, in rheumatic arthritis with deformities, in nodosities of fingers, in obesity and in aortic aneurism, this remedy has given encouraging results. Dose—½ to 1 dr.

Iodepin—Iodized fat.—A fatty compound containing iodine (10 per cent.) chemically combined with sesame oil. The fats have the power to absorb iodine; sesame oil being extraordinarily digestible has been preferred. The oil is a yellow fluid, highly alkaline, taste oleoginous. Insoluble in water or alcohol, dissolves readily in ether, benzene, chloroform and petroleum ether. It contains 24 grs. of iodine, which corresponds to 31 grs. of potassium iodide. Dose—1 dr.

Used as solution of 10 per cent. or 25 per cent. of iodine as capsules for hypodermic injection in the gluteal region or below the skin of the back.

Actions and uses.—It is not absorbed by the stomach, but assimilated in the intestines by the action of the pancreatic juice and bile. Gastric juice has not the power of splitting up iodepin. Introduced into the blood it gradually oxidises owing to its alkaline constituents, and iodine is liberated. Iodepin is eliminated in the urine, and in the milk in women; it is deposited in the bone marrow, liver, and kidneys. It is free from the ill-effects of iodine. Used in the advanced forms of secondary syphilis, scrofula; in tertiary syphlis effecting the muscular system, bones, joints and in syphilitic ulcers. In cases of defective bile secretion, in bronchitis, bronchial asthma and in emphysema it has proved successful. Used as subcutaneous injections in the various forms of neuralgic pains, in perostitis, in aortic and vascular aneurisms, also in scrofulous disorders as tuberculosis of bones, joints, &c.

Iodia—A proprietary medicine—a combination of the active principles (15 grs. each) from the root of stillingia, helonias, saxifraga, menispermum and aromatics. To each fluid drachm of the mixture is added 5 grs. of potassium iodide and 2 grs. of phosphate of iron. As an alterative it is used in syphilis, scrofula, and chronic skin diseases. As an uterine tonic it is given in uterine disorders as amenorrhœa, dysmenorrhœa, menorrhagia, in habitual abortion and general uterine debility. Dose—1 to 2 drs. generally before meals.

Iodine Trichloride.—Heat iodine in a small retort and pass its vapour into a bottle, through which current of chlorine is directed. Orange-coloured crystals, very hygroscopic. As an antiseptic and antifermentative given in dyspepsia. Dose—2 ms. The solution 1 per cent. is used as an injection in gonorrhœa.

Iodo Antifebrin—Para-iodo-acetanilid. Mix together acetic acid and para-iodo-aniline and apply heat. Colourless rhombic prisms without taste or odour, soluble in alcohol, acetic acid, hot water; slightly so in cold water. As an antipyretic given in fever, syphilis and rheumatism. Dose—1 to 5 grs.

Iodo Caffeine—Sodium caffeine iodide. A compound of caffeine with iodide of sodium. A white powder without any odour or taste. Sparingly soluble in cold water. Contains 65 per cent. of caffeine. Decomposes when exposed to the air. Dose—2 to 10 grs. Is a good diuretic.

Given in syphilitic insomnia, as a diuretic to prolong diastole in cases of enfeebled heart given in cardiac dropsy and in cases of pleuritic effusion. Does not disorder digestion or respiration.

Iodotheine—A compound of tea with sodium iodide. Similar to the above.

Iodoform—Iodoformum—Formyl Iodide—Tri-iodomethene, Di-iodomethyl iodide—Methyl Tri-iodide.

Iodoform—From *io* (iodine) and *form* (chloroform). Similar to chloroform. Three atoms of hydrogen are removed and replaced by 3 atoms of iodine.

To prepare it, mix together alcohol, iodine and sodium or potassium bicarbonate, and apply heat. Also prepared by the interaction of hypochlorite of sodium upon acetone in the presence of potassium iodide. It contains 94 to 97 p. c. of iodine. Small, lemon-yellow, hexagonal, lustrous scales or crystals, or fine lemon-yellow powder. Rather greasy to the touch. The odour is peculiar and penetrating, resembling that of saffron. Taste sweetish, iodine-like, but unpleasant. Neutral reaction. Almost insoluble in cold water, soluble in solution of camphor (1 in 10), in cold ether (1 in 8), in cold alcohol (1 in 90), in boiling alcohol (1 in 10), in choloroform (1 in 12), in oil of eucalyptus (1 in 14), in collodion (1 in 10), in vaseline and oil of almonds (1 in 60), in carbon bisulphide, in fixed and volatile oils (1 in 60), and sparingly so in benzol. Dose—½ to 3 grs.

Used as Suppositoria Iodoformi, B.P., 3 grs. in each with oil of theobroma. Unguentum Iodoformi, B.P. (1 in 10) of paraffin ointment—yellow. Unguentum Iodoformi et Eucalypti 1 in 9 of oil of eucalyptus, Bougies of iodoform (nasal) ½ gr. in each with gelato-glycerini. Iodoformi Collodium 1 in 12 of flexible collodion. Insufflatio Iodoformi—2 to 1 of starch. Useful application to venereal sores. Insufflatio Iodoformi Compositæ. Iodoform 1 gr., boric acid 1 gr., morphine acetas ⅛ gr., Emulsio Iodoformi—Iodoform 3, starch 1, glycerin 20, and water 12. Cereolus iodoformi et eucalypti—Iodoform and eucalyptus bougies. Contains Iodoform 5 grs., eucalyptus oil 10 ms., oil of theobroma 35 grs. Used for gonorrhœa. Iodoform gauze 20 per cent., used for burns. Iodoform lint 10 per cent. Iodoform wool—gossypium Iodoformi contains 10 to 50 per cent. of iodoform. Iodoform varnish :—contains benzoin 4, storax 3, balsam of tolu 1, ether 40 and iodoform 4. Used for ear diseases. Pastillus Iodoformi :—1 gr. of iodoform with glyco-gelatin 18 grs. for chronic pharyngitis and syphilitic erruptions of the tongue, mouth and throat. Iodo-vaseline (1 in 10). Unguentum Iodoformi cum atropina.—Iodoform 60 grs., atropine 2 grs. and vaseline 1 oz. Pencils of iodoform contains Iodoform, Glycerine and gum acacia for uterine medication,

Preparations.—Iodoform præcipitatum or precipitated iodoform.—A yellow-coloured palpable powder or in clots—used as dusting powder. Iodoformum aromaticum scented with coumarin (1 in 50). Anozol—A mixture of iodoform and thymol (1 to 10). Iodoform snuff contains iodoform 1 dr., cocaine 10 grs., eucalyptus oil 5 ms., saccharum lactis 4 drs. Used in catarrh of the nose.

Physiological action.—Iodoform is tonic, alterative and antiseptic. Locally the crystalline powder is used for surgical purposes. The precipitated iodoform is for internal use and for insufflation. Locally it is a powerful antiseptic, anæsthetic, detergent, resolvent, stimulant and antitubercular, also alterative—the best agent to prevent decomposition, to prevent or to destroy the germs of putrefaction and of disease. It is decomposed when taken internally and is soon found in the urine. Locally it seems to have no action upon the germs, but it

destroys their toxins. It is a local stimulant and anæsthetic, and as such it is largely used to relieve pain and to stimulate the healing of wounds and ulcers. Very frequently it becomes absorbed into the blood from wounds and ulcerated surfaces, giving rise to symptoms of narcotic poisoning; causing great restlessness, rise of temperature, excitement, headache, quick pulse, followed by unconsciousness, coma, stupor, collapse, great exhaustion, and even death.

Therapeutic uses.—It is highly poisonous to the virus of syphilis and gonorrhœa. It is not irritant like iodine and hence useful in cases of syphilitic affections of the brain and spinal cord. As a stimulant application mixed with oxide of zinc, it is used in carbuncles, injuries and wounds of the cornea, and granular conjunctivitis. With collodion its application is very useful in supra-orbital and other neuralgias. In erysipelas, iodoform with collodion is applied to relieve the pain. It should not be applied extensively or over a very large raw surface. It is of benefit in piles, in fistula and other painful ulcers of the rectum. Triturated with tannin its application is extensively used in midwifery and gynocological practice as in erosion of the os and cervix. It is used as an injection or as a bougie in gonorrhœa, ozæna, and other nasal discharges; and as a snuff in otorrhœa. The powder is insufflated in syphilitic ulcerations of the mucous membrane of the nose, tongue and pharynx. In laryngeal phthisis its application to the ulcerated surface is followed with relief. In syphilitic rheumatism, in syphilitic night pains, also in neuralgia, ulcers and soft chancres it is very useful. A mixture of iodoform and white peat (kieselghur) or a compound powder of iodoform, alabaster and oil sanitas, is sprinkled on fœtid sores with excellent results. In epididymitis or orchitis an iodoform ointment (1 to 4), in nasal catarrh (rhinitis) and in coryza iodoform snuff has been used with benefit. Internally as a tonic, it is given with iron for removing the fœtor of organic discharges as fœtid expectoration, stinking stool, fœtid urine, fœtid perspiration, &c. In tuberculosis it checks the activity of the bacillus. In phthisis and scrofula it is sometimes given with creosote. Under its use the body increases in weight and general condition improves. When ergotin fails in checking hæmoptysis, iodoform with tannic acid has been found very effective; in diabetes it is very useful. It stops vomiting and relieves pain in ulcer of the stomach.

The value of iodoform as an antiseptic dressing for wounds is uncontested, but its peculiar odour is a great bar to its employment. Various efforts have been made to remove this odour by the addition of certain drugs, but to no purpose. Of late certain synthetically-prepared organic compounds have been introduced into practice as substitutes for it with tolerable success.

To conceal the disagreeable smell of iodoform several substances have from time to time been added without forming a chemical compound. These are tannic acid (1 to 4), oil of bitter almonds or oil of roses (1 to 60), Tonquin beans, oil of geranium, balsam of Peru, thymol (1 to 250), menthol, tar, eucalyptus oil, musk, creolin, coumarin (1 in 45), vanilla, sanitas oil, powdered roasted coffee, oil of nitro-benzole, oil of lavender, oil of anise, &c. To remove the odour from utensils, scour the utensils with sawdust and carbolic acid. From the hands, use turpentine.

Iodoform Deodorized.—Iodoform 60 grs., oil amygdalæ 2½ drs., oil of Theobromine 2½ drs., oil of myristicæ 10 ms., musk 3 grs., cumarin 6 grs., spirit 1 dr. A dry powder, used for insufflation or dusting.

Iodoformal.—A compound of ethyl hexamethylene hydriodide and iodoform. As an antiseptic it is superior to iodoform and iodoformin. Used as a dusting

powder or as an ointment 10 per cent., or as sticks, 20 per cent. in gonorrhœa.

Iodoformin.—It contains iodoform 75 per cent. and hexamethylene tetramine 25 per cent. On the addition of acid or alkaline liquids, iodoform is set free. A white powder; becoming yellow on exposure to light; has a very slight odour, is insoluble in water. Used as dressing for wounds and ulcers.

Iodoformum Bituminatum.—A compound of iodoform and tar. Occurs in transparent scales, has a metallic lustre and is easily pulverisable. It diminishes the volatility of iodoform and disguises its disagreeable odour. Used as a stimulant and antiseptic application over indolent ulcers and in chronic skin diseases.

Iodoformogen.—A bright yellow, almost odourless bulky powder. It contains 10 per cent. of iodoform. It is a chemical combination of iodoform and albumen. Used as a dusting powder for wounds and ulcers.

Iodol.—Iodolum—Pyrrol-tetraiodide—Tetra-iodo-pyrrol:—Precipitate pyrrol, a coal-tar product obtained from Dippel's oil (animal bone oil) with alcoholic solution of iodine and iodide potassium, and evaporate. It is a light-brown or yellowish finely crystalline powder, without odour or taste, insoluble in water, soluble in ether (1 in 3), in alcohol (1 in 6), chloroform oils and glycerin (1 in 145); contains 90 per cent. of iodine. Dose—½ to 5 grs. Iodine is readily set free on being slightly heated. Used as ointment (5 to 10 per cent.), as tampons containing iodol 35, glycerin and 24 alcohol.

Actions and uses.—Non-toxic, mild irritant, antiseptic and alterative. Externally a good substitute for iodoform. Used internally it is freely dissolved in the gastric juice and is rapidly absorbed: hence given in place of potassium iodide in tertiary syphilis, tuberculosis, scrofula, diabetes, chronic bronchitis, gastric ulcers, chronic gastric catarrh, chronic intestinal catarrh. Externally an ointment (1 in 50 of vaseline) is used for chronic granular conjunctivitis, lupus, and chancre. A solution of iodol 3, glycerin 62, and alcohol 35, or of iodol 2, menthol 1, and almond oil 96, is used as a paint or spray in diphtheria; a simple powder is dusted over in diphtheria, lupus, otorrhœa, ozæna, tonsillitis, in syphilitic chancres or ulceration or inflammation of the larynx. Tampons are used in gynocological cases. In urino-genital affections as anal fistula, cancer of the uterus, it deodorizes foul discharges.

Iodophenin.—A coal-tar product. A combination of iodine and phenacetin. A good substitute for iodoform. A dark-brown crystalline powder, contains 50 per cent. of iodine, half of which is liberated by solvents, hence apt to irritate; soluble in alcohol, insoluble in water. A strong bactericide.

Iodopyrine - Iod antipyrin.—Antipyrin Iodide.—A derivative of antipyrin in which an atom of iodine replaces one atom of hydrogen. Mix together hot alcoholic solutions of iodine and antipyrin, and crystallize. In colourless silky prisms, without taste or odour, soluble in hot water and alcohol, slightly so in cold water. Dose—15 to 20 grs. It is decomposed in the stomach into antipyrine and iodine. As an antipyretic it reduces the temperature and causes sweating without chills or collapse. Used in fevers, influenza, acute rheumatism, gout, neuralgic headache, in syphilitic bone aches, and in tuberculosis of the ungs.

Isobutyl Nitrite.—An etherial liquid of a peculiar odour; contains 90 per cent. of amyl nitrite. Dose—3 to 5 ms. Used as capsules for inhalation. It is a cardiac stimulant, nerve sedative and motor depressant. It acts promptly on blood pressure, respiration and pulse rate. A substitute for amyl nitrite but more reliable. Given internally and by inhalation in cardiac pain, also sea-sickness, ague, angina pectoris, asthma.

Itral—Jatrol.—Obtained by the interaction of nascent iodine upon one of the odide of the alkaline group. A non-toxic non-irritant crystalline compound—used as dusting powder, or ointment known as unguentumcrede, and solution. The ointment is used as an antiseptic dressing for suppurating and neglected wounds. The solution 1 in 2,000 is often used to wash the wounds. The ointment is locally applied in rhinitis and coryza; also in epididymitis, to suppress its enlargement.

Itrol—Argenti Citras—Silver Citrate.—White powder, without any odour. Is non-caustic. Soluble in water (1 in 4,000). Used as lotion, ointment or powder. An antiseptic for wounds.

Izal.—Thorncliffe disinfectant. A proprietary article. A bi-product of Thorncliffe iron works in the process of coal formation. A white emulsion of tarry hydro-carbons; contains little phenol, but probably some of its homologues; it does not coagulate albumen, does not oxidize; used as solution (1 in 200).

Actions and uses.—Non-irritant, non-toxic, non-corrosive, antiseptic, germicidal and disinfectant. Used in eczema, ringworm, to wash out suppurative cavities, fresh wounds, foul ulcers, fœtid sinuses. Internally it is given in chronic dyspepsia, fœtid breath, fœtid stools, fœtid bronchital expectoration. Has been tried with success in hay bacillus, mesenteric bacillus, anthrax, glanders, septicœmia, cholera, pneumonia, &c.

Kairin—Oxy-chinoline Ethyl Hydride.—A synthetically prepared alkaloid. Obtained from coal-tar or by the action of acetic acid on quinoline. With hydrochloric acid it forms kairin hydrochloride. White crystals, soluble in water, having a persistently nauseous taste. Dose—5 to 8 grs. An antithermin and antipyretic. Given in typhoid fever, scarlatina, pleurisy, phthisis, erysipelas, ague and septicœmia.

Kandol.—A product formed by the distillation of naphtha. A perfectly clear and colourless fluid, extremely volatile, easily inflammable, smelling slightly of benzene. Miscible with a small quantity of water or alcohol. Highly anæsthetic. A spray applied to the skin, reduces the heat and the skin becomes very hard and completely anæsthetised.

Kaputin or Salfene.—Powdered acetanilid coloured with some coloring substance.

Keratin.—A pepsinized product. Prepared from animal horns or quill shavings by the action of dilute hydrochloric acid and evaporated to dryness or by interaction of pepsine and ammonia. A pale, yellowish-brown, amorphous powder. Soluble in ammonia or acetic acid. Is insoluble in the acid gastric juice, but only soluble in alkaline intestinal liquids. Used to coat pills which, when swallowed, have to pass from the stomach into the intestines unchanged.

Kristalline—Cristaline. A form of collodion. Contains pyroxylin 5, methylic alcohol 20, amyl acetate 75. Forms a transparent flexible film.

Kryofin—Methoxy-acet-para-phenatidin; methyl-glycolic-acid-phenetidin. A phenetidin derivative in which methyl-glycolic acid is replaced by acetic acid. A coal-tar product allied to phenacetin, containing para-phenatidin and methyl-glycolic acid. Prepared by heating para-phenatidin with methoxy-acetic acid. It occurs as fine white crystals or needles, quite odourless and tasteless; soluble in cold water (1 in 600), boiling water (1 in 62), also in alcohol, ether, choloroform and fixed oils. Dose—3 to 8 grs. As an antipyretic, antineuralgic, analgesic, and hypnotic; most valuable in hyperpyrexia of phthisis, in influenza, enteric fever, migraine, facial neuralgia, sciatica, &c. As a febrifuge

it is superior to other antipyretics. In neuralgic dysmenorrhœa it is given with benefit.

Lactophenin—Lactyl-phenetidin.—A derivatlve of phenatidin. Produced by the interaction of lactic acid on paraphenetidin. It differs from phenacetin in that the acetic acid group has been replaced by lactic acid. A white, insipid powder, soluble in water (1 in 330). As an analgesic, antipyretic and hypnotic given in neuralgia, migraine, acute rheumatism, chorea, locomotor ataxia, typhoid fever, influenza and other zymotic diseases. Dose—5 to 15 grs.

Lactyl tropeine.—Produced by the action of lactic acid upon tropeine. In white needles, soluble in water, ether, alcohol and chloroform. As a cardiac and gastric tonic given in palpitation and dyspepsia. Dose—½ to 2 grs.

Lanoform.—A dusting powder having formaldehyde as its base. A mixture of aldehyde, talc, precipitated zinc oxide, starch powder, and wool fat. Used as a local application in excoriations and sores in children and infants.

Lanolimentum Boro-glycerini.—Contains boric acid 2, glycerine 10, water 5. Apply heat; when dissolved, add wool fat and olive oil. Used as an emollient and soothing for abrasions, wounds, &c.

Largin.—An albuminoid component of protalbin and silver. A non-irritant, whitish-grey powder; contains 11 per cent. of silver. It is soluble in water (1 in 10), freely soluble in glycerin. It is not precipitated by chlorides or albumen. The solution (1 in 50) is used as bactericide and astringent. Like silver nitrate it is non-irritant. It easily penetrates into the tissues. In urethral gonorrhœa it kills gonococci. It is more effective than protargol.

Lenigallol—Triacetate of pyrogallol.—Substitute for chrysarobin, resorcin and pyrogallol. Lenigallol, a white powder, insoluble in water, soluble in strong aqueous alkalies. Its ointment is used in psoriasis, eczema, &c. Its action is slow, does not affect the healthy skin. Other pyrogallol derivatives are eugallol, a monoacetate of pyrogallol and saligallol, a salicylate of pyrogallol.

Leurobin.—Tetra acetate of chrysarobin; properties similar to chrysarobin, but milder. It is non-poisonous, non-irritatant. Does not stain the cloth or skin. Is insoluble in water; used as a dusting powder in psoriasis, chronic eczema, herpes, tonsurans, &c.

Lipanin.—A straw-coloured oil. Taste oleaginous, containing 6 per cent. of free oleic acid. It is readily assimilated. Used as an emulsion like cod-liver oil. Dose—1 dr. Like cod-liver oil it does not cause nausea, vomiting, diarrhœa or hiccough. Under its use the body rapidly increases in weight. Given in tuberculosis, pulmonary affections. In rickets it is combined with phosphorus.

Listerine.—An American speciality composed of oxoniferous essences. It contains benzoic acid 1, boracic acid 25, combined with active vegetable antiseptics, as thymol 1, eucalyptol 1, tincture of baptisia 15, oil of gaultheria 2, oil of peppermint ½, alcohol 325 and water to make 1000. A 20 per cent. solution is used as an asepsis by spray, irrigation, atomization or as a lotion and mouth wash. A clear liquid; odour aromatic; colour hay-like. Contains 2 per cent. of benzoboric acid. An active ozonifying and oxydizing agent; a standard antiseptic disinfectant, deodorant, non-toxic, non-irritant and non-escharotic. Used as an antiseptic dressing for operative and other wounds; a prophylactic agent in gynæcology and in the treatment of nasal and urino-genital catarrh. Given in diphtheria, diarrhœa in children and adults, scarlet

fever, pertussis and in fermentative form of indigestion. Its application preserves the teeth from decay. As a spray it clears the atmosphere of the room of its organic matters. It is a destroyer of infusorial life. Dose—1 fl. dr.

Loretin.—Meta-iodo-ortho-oxy-quinoline-ana-sulphonic acid. A bright yellow-coloured crystalline powder, similar to iodoform in appearance, but without its odour; slightly soluble in water and alcohol; forming soluble salts with alkalies, as sodium or potassium, but not with lime; forming emulsion in ether and in oils. Bismuth Loretinas. Dose—8 to 15 grs.

Actions and uses.—Antiseptic, non-toxic and non-irritant. A good substitute for iodoform; used as dusting powder or as insufflation or lotion in discharges from the nose and ear, in burns, ulcers and other wounds. As a deodorant it removes the offensive smell from purulent discharges. Urine is not affected by this drug. Bismuth loretinas has a drying effect on wounds. Internally given in diarrhœa of phthisis in the last stage.

Losophan—Meta-tri-iodo-cresol.—Pass iodine through an alkaline solution of oxy-para toluic acid. Colourless or greyish, needle-shaped crystals without any odour and of an acid taste. Soluble in benzene, chloroform, ether, oils and fats, slightly so in alcohol and insoluble in water. Contains 80 per cent. of iodine. As an antiseptic, parasiticide, the lotion 1 to 2 per cent. in alcohol or the ointment (1 to 5 per cent.), or the dusting powder is used in parasitic skin diseases, as eczema, prurigo, &c.

Lycetol.—Di-methyl-piperazine-tartrate. A compound of piperazine and tartaric acid. A white powder soluble in water. Dose—4 to 10 grs.

Actions and uses.—Antiarthritic, antilithic, diuretic.—It combines the uric acid solvent properties of piperazine with diuretic properties of tartaric acid. Increases diuresis and lessens the specific gravity of urine. Used in gout, rheumatism and uric acid diathesis.

Lyptol.—Contains hydrargyri bichloridi, formalin, oleum eucalyptus, and benzo-boracic acid. As an antiseptic the ointment is used in the treatment of skin diseases, cuts, burns, scalds, bruises, ulcers, sores, &c.

Lysidine—Ethylene-ethenyl-diamine. A reddish, white crystalline substance. Solution Lysidine (1 in 2) an alkaline liquid. Given in acute gout, uric acid diathesis. With piperazine it renders the blood more capable of removing uric acid deposits and so increasing elimination. Dose—30 to 60 ms.

Lysidine—Lysidine acid-tartrate—Lysidine Bitartrate. A white crystalline powder of a saline taste, non-deliquescent. Soluble in water. Dose—5 to 15 qrs. Used like the above.

Lysol-Lysolum.—A German speciality. A saponified product of coal-tar. Boil the tar oil with fat until it is dissolved. Filter and again boil. Then saponify with alcohol or an alkali. Also obtained by the saponification of creosols. It is a brown, oily liquid, of an aromatic odour, resembling creosols. Contains higher homologues of phenol about 50 per cent. Soluble in water, forming a gelatinous mixture, also in alcohol, chloroform and glycerin. The solution, 1 to 3 per cent., is used as a disinfectant and antiseptic. It is 5 times stronger than carbolic acid and ½ as poisonous. Used in aural surgery and in gynæcology. In metorrhagia and in cases of retained placenta used as an application to the uterus after curetting, also applied as a paint in skin diseases as lupus, in diphtheria; and as a gargle for foul breath.

Malakine—Salicyl-para-phenetidin.—A combination of phenacetin and salicylic acid or a condensation product of salicylic aldehyde and phenatidin. Small, clear, bright yellow needles; insoluble in water, with difficulty soluble in

cold alcohol, more readily so in hot alcohol. As an antipyretic the action is slow and free from the ill after-effects. As an anodyne, antipyretic and analgesic it is used in rheumatic arthritis, neuralgia, habitual headaches, fever, &c. Dose —60 to 90 grs. in cachets.

Mannitol Hexanitrate—Mannitol nitrate—Hexanitrin—Nitro-mannite.—In fine light acicular quinine like needles, liable to decomposition if long kept. The crystals explode on being struck on a hammer, more explosive than erythrol nitrate; they are sparingly soluble in water. Used as tablets, 1 gr. each, with chocolate as a vaso dilator in angina. Other properties are similar to those of urethral nitrate.

Merrol—A proprietary preparation containing ox marrow, malt extract, and hop extract. Given in wasting diseases.

Mercauro—Bromides of mercury, gold and arsenic. 10 ms., contains gold, arsenic and mercury bromides $\frac{1}{11}$ gr. each. As an alterative tonic given in anæmia; as antisyphilitic it is given as a specific in syphilis. Dose—5 grs.

Mercuro—Iodo-hemol. A brown powder containing mercury 12·35 per cent., iodine 28 per cent. and hemol 68 per cent. Given as antisyphilitic in syphilis. Dose—2 to·5 grs.

Meta aldehyde.—A polymer of aldehyde. Identical in composition with para-aldehyde—occurs in silky-white acicular crystals, insoluble in water, slightly soluble in alcohol and ether. Given as an hypnotic and sedative. Dose—2 to 8 grs. in cachets or pills.

Methacetin—Para-acet-anisidin; Oxy-methyl-acetanilide.—A derivative of amido-phenol and contains methyl in place of the ethyl group. It differs from acetanilid in the substitution of oxy-methyl atom for hydrogen atom. White or slightly reddish, shining, scaly crystals; without any odour and of a bitter saline taste; soluble in water (1 in 500), more so in hot water, freely soluble in alcohol, chloroform, glycerin and fatty oils. Dose—2 to 5 grs. in cachets.

Actions and uses.—A powerful anodyne, antiputrescent and antipyretic, good for children and feeble persons. Like phenacetin the fall of temperature is gradual, and lasts for some hours. The rise following it is more rapid than the fall. Given in neuralgia, pneumonia, typhoid fever. In tuberculosis and acute rheumatism it should be used with caution, as it often leads to violent and exhausting perspiration.

Methylal—Methylene-di methyl ether. Distil methyl alcohol with an oxidizing mixture of sulphuric acid and manganese-dioxide; add to the distillate potash lye to separate methyl formate, and re-distil. A colourless, mobile liquid of a slightly acid reaction; odour like that of a mixture of chloroform and acetic ether; taste burning and aromatic. It produces a cold sensation on the skin. Is soluble in water (1 in 3) and in ether, alcohol and oils. Dose—15 to 30 ms. in syrup.

Actions and uses.—Local anæsthetic, efficient hypnotic, given to promote sleep. It increases the heart-beats and lowers the blood pressure. As an antispasmodic it is given in asthma, nervous, stomachic, and renal pains. With amyl nitrite it is given in angina, tetanus, colic, and insomnia. Like chloroform, it is an effective remedy in delirium tremens; its vapour combined with that of ether is used in place of chloroform in surgical operations; 10 to 15 per cent. solution in oil is externally applied. It is a good antidote to strychnine poisoning. It suspends the spasm and relieves the nervous stomachic pain.

Remarks.—It is a solvent for the odorous principles of flowers in the manufacture of perfumery.

Methyl Chloridum—Methyl Chloride—Mono-chlor-methane. Mix together methyl alcohol, chloride of zinc and hydrochloric acid; or heat trimethylamine hydrochloride—trimethylamine being a residual product in the manufacture of alcohol from beetroot molasses—and distil, when ammonia and methyl chloride are formed. Pass hydrochloric acid to separate ammonia, and methyl chloride gas passes over. It is a colourless gas becoming liquid when condensed under cold and pressure, and having an odour like that of ether or chloroform; evaporation produces intense degree of cold. Used in the preparation of anestile. As a local anæsthetic, it is used as a spray in minor surgical operations, as for opening abscesses, boils; and as a refrigerant in operations for strangulated hernia, phymosis, &c. It is also used in scraping lupus, in the treatment of articular rheumatism, pleurisy, pneumonia, neuralgia, lumbago, sciatica, gout, muscular pains and as an application by a brush to the scrotum for orchitis, the surface should at first be painted with glycerine or oil.

Remarks.—It is supplied in a liquid form in iron cylinders from which it is applied to the part, as a spray or by means of tampons soaked in the liquid. The spray should be applied obliquely to the surface and with care, otherwise it may cause blisters or eschars. It should not be continued longer than 4 minutes, as death of the tissues may result.

Methylene Blue—Tetra-methyl-thionine chloride. An aniline derivative; dull or dark-green crystals or in brown powder forming an intense blue solution in water (1 in 50). Used as an injection hypodermically. Dose—1 to 4 grs. As a general anodyne or analgesic combined with ichthyol and chian turpentine it is injected hypodermically in cancer. As an alterative it is given in albuminuria, in acute and chronic Bright's disease, dyspepsia, remittent fever, cystitis and gonorrhœa. In migraine, chronic rheumatism, neuralgia and other painful nervous affections and in certain malarial or non-malarial fevers, and in nephritis, its administration is followed by marked relief.

Remarks.—It colours the urine blue; combined with nutmeg it prevents strangury. It is useful for the purpose of diagnosis of diabetic from non-diabetic blood. A dilute solution of methylene blue when heated is discolored on the addition of diabetic blood and will produce a yellow colour.

Methylene.—Formerly called Methylene Bichloride; Dichlor-Methane.—To obtain it pass chlorine gas over methyl chloride; or reduce chloroform with metallic zinc and hydrochloric acid. It is considered to be merely a mixture of chloroform and alcohol. It is a colourless, ethereal liquid, of an agreeable odour like that of chloroform; insoluble in water, but soluble in alcohol and ether; air charged with methylene vapour is used as an anæsthetic for minor and major operations. It is more rapid in producing unconsciousness than chloroform and considerably safer, also quicker in passing off. Advocated where ether and nitrous oxide is contraindicated. It is less safe than ether. For inhalation. Dose—1 to 2 drs. for minor operations, and 3 to 6 drs. for major operations.

Methyl Salicylas—Methyl salicylate.—Artificial oil of winter green. It is also synthetically prepared by distilling salicylic acid or any alkaline salicylate with methyl alcohol and sulphuric acid. A faint yellowish liquid, odour aromatic, taste sweet or resembling that of oleum gaultheria. It is quickly absorbed if applied to the skin and is less irritating than the natural oil. Dose—1 to 5 ms.

As an antiseptic, antipyretic, stimulant and diuretic. It is given in articular rheumatism, sciatica, cystitis, migraine and diabetes.

Microcidine—Sodium Beta Naptholate.—A combination of B. naphtol and caustic soda. A yellowish-white powder, non-toxic, soluble in water (1 in 3). Contains sodium naphtolate 75 per cent. and mixed naphtol and phenol compounds 25 per cent. A powerful antiseptic. Used as solution (1 in 300), lotion, and dressings or bandages for foul sores and ulcers.

Monol.—Calcii permanganas—Calcium permanganate—Brown crystals, highly deliquescent, soluble in water 1 in 100,000 It sterilizes water in five minutes. As an intestinal antiseptic given in gastro-entritis, diarrhœa. Externally used as a mouthwash for fœtid breath. Dose—1 to 2 grs.

Merphinæ Phthalas.—A combination o morphine and naphthalic acid. A fine, amorphous, greyish powder in glassy scales. Contains 77 per cent. of the alkaloid; soluble in water (1 in 5), used as a hypnotic. The solution is hypodermically injected like morphine in painful neuralgia, sciatica, &c. Dose—$\frac{1}{8}$ to $\frac{1}{4}$ gr.

Muscarina.—Muscarine. Obtained from brain substance. Also found as an alkaloid in Agaricus Muscarius or Amanita Muscaria. Like gelsemium if applied locally it dilates the pupil; if given internally it causes contraction. Like pilocarpine it produces diaphoresis and salivation. It is antagonistic to atropine. Used in night sweats, diabetes insipidus, constipation, and in congestion of the lungs; its salt. Muscarinæ Nitras is hygrosespic. Dose—$\frac{1}{10}$ to $\frac{1}{15}$ gr., hypodermically or in pill.

Mydrine.—A mixture of homatropine and ephedrine (1 in 100). Ephedrine is an active principle of gentian (Japanese). It is a white powder, freely soluble in water. As a mydriatic a 10 per cent. solution causes moderate dilatation of the pupil, produces quicker but less lasting results.

Mygranin—Antipyrin Caffeine Citrate.—A compound of antipyrine, caffeine, and citric acid. It contains 9 per cent. of caffeine. A crystalline powder, soluble in water; as an anti-neuralgic it is given in migraine and the headache of influenza. Dose—8 to 15 grs.

Naphthol—Beta-naphtol, B.P.—Alcohol of naphthalene—Naphthyl alcohol—Beta mono-hydroxy-naphthalene. A derivative of hydrocarbon, phenol, or coal tar. To prepare it add sulphuric acid on naphthalin, when beta-naphthalene sulphuric acid is formed. To this add fused soda and afterwards hydrochloric acid; naphthol will be left behind. A colourless shining luminar or yellowish white crystalline powder, of a faint camphorated storax or phenol-like odour, sharp and pungent taste, soluble in water (1 in 1,000), and in hot water (1 in 75); addition of boric acid increases its solubility in water, soluble in alcohol (3 to 4); readily so in boiling alcohol, ether, chloroform, olive oil (1 in 8), petroleum, benzole, camphorated spirit and alkalies. With camphor it forms a liquid combination. Dose—3 to 10 grs., in cachet.

Preparations.—Alcoholic solution (1 in 20) of spirit with glycerine (1 in 10). Antiseptic gauze. Dusting powder, contains beta-naphthol 10 grs. and bismuth subnitris 1 oz. Unguentum naphthali (1 to 8 of lard)—Kaposis ointment. Contains zinc oxide and lead acetate; compound powder contains beta-naphthol 5 grs., bismuth salicylol 6 grs., and magnesia 8 grs. Dose—15 to 20 grs.

Actions and uses.— A powerful antiseptic, germicide and vermifuge, has a local sedative action on the skin or the mucous membrane. It is more readily absorbed. If taken in large and continued doses it gives rise to vomiting, nephritis, bloody urine, to convulsions, and unconsciousness. Like tar the naphthal solution or ointment, 10 to 15 per cent., is used to destroy parasite, to relieve

irritation of the skin as in scabies, acne, eczema, pediculi, psoriasis, bites of lice, mosquitoes, bugs, &c.; as a dusting powder, or the solution is used in ulcers and for removing fœtor of cancer, in hyperidrosis, bromidrosis, and for fetid odorous secretions occurring in axilla, feet, inguinal regions and hands; as a spray in otitis, ozæna, &c., as an inhalation in pharyngitis, chronic nasal catarrh, whooping cough and chronic bronchitis; as a gargle it is used in pharyngitis, relaxed uvula and sore throat. Internally it is given to check vomiting in flatulent dyspepsia, enteric fever, cholera; also in diarrhœa and dysentery. Compound powder is given in dyspepsia with constipation, in scarlet and typhoid fevers. It is one of the ingredients in dentifrice powders.

A. naphthol is a powerful antiseptic, similar to B. naphthol, but possessing ⅓ the poisonous action of B. Naphthol. It also forms a liquid compound with camphor. Is more irritant than B. Naphthol, but less toxic. 5 grs. in a quart of water is used to wash the intestines.

Naphthol cum Camphora—Naphthol camphor—Camphorated naphthol, beta-naphthol camphora is said to have 3 times the antiseptic power of B. Naphthol. Heat beta-naphthol and camphor (2 to 4). A viscid liquid; insoluble in water, freely miscible with fixed oils. It dissolves ⅓ of its weight of iodine and cocaine. Decomposes on exposure to air and light. Dose—2 to 5 ms. Undiluted. Used as an injection. Ointment (1 in 100).

Actions and uses.—As a parenchymatous injection used in tuberculous adenitis, tuberculous testitis and in tuberculosis of the bladder. Also used for irrigating cold abscesses, joints, bony cavities, &c. As a local stimulant and sedative of the skin its ointment is used in excorations, wounds, ulcers, &c.

Oxy-naphtholic Acid.—A naphthol carbonic acid—Carbo-naphthoic acid.—Prepared from A. naphthol in the same way as salicylic acid is prepared from phenol. A white crystalline powder without any odour, insoluble in water, soluble in alcohol and alkalies. A very fine antiseptic, a substitute for, and five times stronger than, salicylic acid.

Hydrargyri Napthol Acetas—Mercury B. naphthol acetate.—A white amorphous powder, without any odour; insoluble in the usual solvents and becoming a green oily liquid by heat. Used as a dusting powder with kiesulguhr (1 or 2 in 100) or as a paste triturated with albumen. As an antiseptic and mild antisyphilitic it is used for wounds, ulcers and chancres. Dose—½ to 1 gr.

Hydrargyrum Naphtholicum—B. Naphthol mercury.—A mild, yellow neutral powder, without any odour, insoluble in the usual solvents. Contains mercury 30 per cent. Used as a dusting powder mixed with kieselguhr (1 in 100) or as a salve mull. As a mild antisyphilitic it promotes the healing of wounds. It has a specific action in typhoid. Dose—½ to 1 gr.

Naphthalinum—Naphthalin—Naphthalene—Tar Camphor—Camphor balls.—A benzene derivative; a hydrocarbon; a by-product in the manufacture of coal gas. Colourless, crystalline, shining plates of the odour of coal-tar; taste burning and aromatic; very volatile, insoluble in water, soluble in alcohol (1 in 15), freely soluble in hot alcohol, ether, carbon bisulphide, fats, fixed and volatile oils. Dose—2 to 15 grs. As an anthelmintic, 15 grs. given with malt extract, in powder with sugar, in capsules, or pills with mucilage.

Preparations.—Naphthalinum Precipitatum. Dissolve naphthalin in alcohol and re-precipitate it with water. A fine powder, but less irritating than naphthalin. Used as ethereal solution 10 per cent. or 10 to 20 per cent. solution in oil as a parasiticide in scabies; and as bandages, gauze, wool and as an enema. Dose—8 grs.

Naphthalene Tetrachloride—Naphthalin Hydrochloride.—Rhomboic prisms, without any odour and without colour, insoluble in water. Dose—3 to 12 grs, in cachets or pills a-dichloro-naphthalene obtained by the interaction of alcoholic potash on naphthalene tetrichloride. In small granular crystals.

Physiological action.—Antiseptic, disinfectant, parasiticide, antiphlogistic, antifermentative, vermifuge, expectorant and anodyne. Like iodoform, it is destructive to low organisms, animal and vegetable. It is not absorbed by the system ; it acts only on the mucous membrane of the bowels. It is very sparingly soluble, and hence taken into the blood it is eliminated by the kidneys unchanged.

Therapeutics.—It is given to soothe the irritated mucous membranes, in intestinal, gastric and vesical catarrh, in worms, in dysentery, in diarrhœa due to phthisical and typhoid ulcers, &c. As an antiseptic it removes the fœtor from stools, breath and urine, and hence given in infantile diarrhœa, enteric fever, cystitis and suppurative nephritis. As a stimulant expectorant it is inhaled in diphtheria, whooping cough in children, in chronic bronchitis and other lung affections. As a parasiticide, an ointment composed of naphthalin with sulphur and balsam of peru, or of naphthalin with soap, chalk and lard, is used in scabies, pediculi, indolent ulcers, open sores, chancres, sloughing wounds, pus cavities, &c. The solution (1 in 10) is used to relieve irritation from bites of bugs, mosquitoes, bees, flies, &c. It is a valuable anthelmintic in tinea and ascarides; it is an alternative to iodoform, and on account of its volatile character it is used to purify the air of sick rooms, bath rooms, privies, &c. Naphthalene is moulded into blocks or sticks and sold under different names—Alabastrin, used for preventing moths ; Camphylene, for disinfecting urinals, and stables ; Albo carbon, for increasing the luminosity of gas.

Nasrol—Sodium Caffeine Sulphonate—Caffeine-Sulfo-saur-en-natrinus—Symphorol Nitrium.—A compound consisting of caffeine, sulphonic acid and sodium. A white crystalline powder, soluble in water. As a diuretic given in cardiac and renal affections and in fatty heart. Dose—10 to 15 grs. Like symphoral nitrium, lithium and strontium are also prepared, and called, respectively, symphorol lithium and symphorol strontium.

Nectrianine.—Non-poisonous. Used as an hypodermic injection and paste in the treatment of cancer. It relieves the pain, arrests hemorrhage, and removes the fœtor from the discharges.

Neurilla.—Contains the active principle of scutellaria and aromatics. A calmative for nervousness, restlessness, tremors, twitchings, &c. Given during menstruation and pregnancy. In fevers during child-birth and during teething in children. It induces nerve tranquility. Dose—½ to 1 dr. In children, 5 to 20 drops.

Neurodins—Acetyl-para—Oxy-phenyl-urethane.—Colourless crystals, slightly soluble in water, soluble in boiling water (1 in 140). Dose—15 grs. as antineuralgic, 5 to 10 grs. as antipyretic. As an antirheumatic, analgesic, and antinervine it is given in various forms of fevers and in neurotic diseases, chiefly in women as sciatica, rheumatic pains, migraine, &c.

Nitro Glycerinum—Nitro Glycerin—Trinitrin—Glyceryl Trinitrate—Glonoin Glonoinum.—Add pure glycerin into a mixture of fuming nitric and sulphuric acids, keep cool by ice below 40° F. Throw the product into water. Nitroglycerin is separated and dried. A colourless, dense, oily liquid, without odour and of a sweet aromatic taste. Highly dangerous explosive, slightly soluble in water, freely so in alcohol, ether, oils and fats. Dose—$\frac{1}{100}$ to $\frac{1}{50}$ gr.

A mixture of nitro-glycerine with an infusorial earth forms an explosive familiarly known as dynamite.

Liquor Glonoini.—Solution of Glonoin, Spirit of Nitro-glycerin Liquor Trinitrini, B.P. Solution of Trinitrin—Liquor Nitro-glycerini.—It contains 1 gr. in 110 ms. of alcohol. A clear, colourless liquid, of an alcoholic odour and taste. Dose—½ to 2 ms. Tabellæ nitro-glycerini—Nitro-glycerin tablets—Tabellæ glonoini Trochisci nitro-glycerini. Contains nitro-glycerin $\frac{1}{100}$ gr. in solution with chocolate. Dose—1 to 2 Tabellæ Trinitrini, B.P.—Contains chocolate and nitro-glycerini $\frac{1}{100}$ gr. in each. Dose—1 to 2 tablets. Injectio nitro-glycerini hypodermica ($\frac{1}{2}\frac{1}{10}$ gr. in 1 m.). Dose—1 to 4 ms. Tabellæ trinitrini compositæ—Nitro-glycerin $\frac{1}{100}$ gr., amyl nitrite ½ gr., capsicum $\frac{1}{50}$ gr., menthol $\frac{1}{50}$ gr. Dose—1 to 2 tablets. Capsicum exerts a warming action, and menthol facilitates the absorption of nitro-glycerin. Oleum nitro glycerini (1 per cent. in almond oil). Dose—1 to 2 ms. Pilula Nitro-glycerini—Made with the obroma oil as basis $\frac{1}{100}$ to $\frac{1}{50}$ gr. or more.

Actions and uses.—An unstable compound, acts more powerfully than nitrite of sodium and amyl nitrite; the whole of it is absorbed without decomposition, and the nitrous acid is set free in the blood. It is a cerebral and cardiac stimulant, motor depressant, vaso-dilator, and antispasmodic. It has a powerful action on circulation; it dilates the blood vessels, and increases the arterial tension. It acts rapidly as amyl nitris, but the result is not so lasting. One drop of 1 per cent. solution, if given early, wards off an attack of angina pectoris or of fainting. As an antispasmodic it is given in asthma, hiccough, sciatica, hysteria, dysmenorrhœa, convulsions, epilepsy, sick headache, whooping cough, &c. As a cardiac stimulant like digitalis, it is given in weak and fatty heart with dyspnœa, in pulmonary congestion, pulmonary œdema and dropsy; also in collapse, fainting, coal gas poisoning and in drowning. In epilepsy it is said to lessen the frequency of the attacks. It is given to relieve craving for opium. It is sometimes given in Bright's disease and in uræmic coma.

Nosophen—Iodophen—Tetra-iodophenol phthaleine.—Obtained by the interaction of iodine and phenol-phthalein. A yellow powder without any odour or taste. Insoluble in water, soluble in ether and chloroform. Contains 60 per cent. of iodine. Like an acid it combines with bases to form salts. With sodium it forms a soluble salt, a greenish blue powder having a faint odour of iodine and known as antinosin; with bismuth, an insoluble salt containing 52·9 per cent. of iodine and 14·5 per cent. of bismuth; odourless and tasteless powder and known as eudoxin. As a germicide and antiseptic they are used as an insufflation or a dusting powder in rhinitis, coryza, eczema, wounds, and ulcers; internally given in gastro-intestinal catarrh. Dose—3 to 8 grs.

Okol.—Contains hydrocarbon acid 33 per cent. and neutral oils. An emulsion of an opaque-gray colour. As a disinfectant and bactericide it is used as a wash or a spray (1 in 300) or as a lotion (1 in 200) for foul ulcers and sores.

Ole-anodyne.—A combination of oleic acid with vegetable alkaloids as aconitine, atropine, morphine and veratrine. It is rapidly absorbed, and forms a strong anodyne liniment which can be diluted with oils, chloroform or with spirit. It is not compatible with compound camphor or with soap liniment.

Oleite—Polysolve—Solvine—sulphoricin oleate of sodium.—Treat castor oil with sulphuric acid, wash with water and ether, and saponify with soda. These preparations consist of sulphoricin oleate of sodium. Oleate is a yellowish, oily liquid, miscible with water, alcohol and chloroform, readily absorbed by the skin. It has a remarkable solvent power. It readily dissolves

sulphur, chrysarobin, iodoform, also alkaloids whose activity it greatly increases. Mixed with gelatine it is used as a soothing and emollient plaster. It is known as Turkey red oil, as it is used as a solvent for the dye of Turkey red.

Orexine—Phenyldihydrochinazolin.—Orexin means increasing appetite. A synthetically prepared base. A yellowish white powder or crystals. The taste is nauseous and pungent, is highly irritating to the nostrils. Almost insoluble in water and in alcohol; completely insoluble in ether. Dose—2to 10 grs. In coated pills or cachets. Orexine hydrochloride is a white powder, but soluble in water (1 in 13) and in alcohol, but in soluble in ether; very irritating and causes vomiting. Orexin Tannas—Orexine Tannate.—Is a greyish-white powder, without taste or odour, insoluble in water. Dose—4 to 8 grs. Used as powder, tablets, capsules or cachets.

Actions and uses.—As a stomachic and digestive, orexine supersedes all bitter infusions. It stimulates the appetite. This action is chiefly due to the increase of the hydrochloric acid secretion. It has also a stimulating effect upon the motor and sensory nerves of the stomach, hence given in vomiting of pregnancy with benefit. Given in tuberculosis in children and in phthisis. Orexine tannate improves general health. Under its use vomiting brought on by frequent attacks of coughing disappears. During convalescence after severe and exhausting illnesses, orexine tannate improves the appetite and restores strength. Should not be given in hyperacidity and gastric ulcers.

Orphol—Bismuthi-Beta-Naphthalate.—A compound of beta naphthol and bismuth. Contains 50 to 70 per cent. of bismuth oxide. A reddish-brown powder, without any odour. Insoluble in water. Dose—10 to 20 grs. As an intestinal, antiseptic and astringent it is less irritating than naphthol, and given in gastric and intestinal fermentative disorders as dyspepsia, enteritis, &c.

Orthoform—Methyl-ester of para amido-meta-oxy-benzoic acid.—White crystalline powder, non-poisonous, of alkaline reaction, without any odour or taste, slightly soluble in water. With acids it forms salts. Dose—1 to 3 grs. Orthoform hydro-chloride.—A fine powder, soluble in water (1 to 9), too acid and highly irritating; used for urethral injection. As a dusting powder and ointment (10 per cent.) with paraffin; lanoline or too acid for hypodermic injection or for applying to the eye, pure orthoform is used as a solution in collodion.

Actions and uses.—Local anodyne, antiseptic and narcotic. As an anæsthetic it acts only when in contact with exposed nerve ends. It is given in painful gastric ulcers and cancer. In syphilitic headache it is very useful when given internally. Externally used to relieve pain in sores, wounds, burns, ulcers and cracks on the nipples. The solution of orthoform is used as a paint or as an emulsion with glycerin, for application within the uterus as it renders the operation painless. In whooping cough the powder is insufflated into the posterior part of the pharynx through an atomiser.

Panopepton.—Contains all the elements of nutrition in a peptonized, diffusible and soluble form.

Paraffinum Durum, B.P.—Hard paraffin—Paraffin wax—Solid paraffin—Petrolatum spissum.—A mixture of several of the harder members of the paraffin series of hydrocarbons. Obtained by distillation from shale (a rock of slaty structure). The lighter or more volatile portions being distilled off, the solid products are purified, and the liquid oils separated by refrigeration and purification. Colourless, semitransparent, fatlike mass of the consistence of cerate; colour white to yellow, without any odour or taste; slightly unctuous to the

touch, insoluble in water, sparingly soluble in alcohol, and freely soluble in ether. It melts at 130° F. It burns with a bright flame, leaving no residue. Chiefly used to form ointment bases. It gives consistency to vaseline which is generally too soft for general use. Another variety is known as Ceresin. It has melting point about 155° F. It is a hard white paraffin prepared from ozokerit or earth wax. When coloured yellow, it is known as yellow Ceresin.

Paraffin Molle, B.P.—Soft paraffin—Petrolatum molle.—A semisolid mixture of several softer or more fluid members of the paraffin series of hydrocarbons obtained by purifying the less volatile portions of petroleum; occurs as white or yellow, soft, transluceut mass of the consistence of ointment, unctuous to the touch, free from any unpleasant odour, melts at 102° F., and combines with fats, oils, oleates and oleic acid. It readily dissolves alkaloids, also thymol, menthol, salicylic acid and chrysarobin. It dissolves phenol (1 in 20), atropine (1 in 120), morphine (1 in 200), cocaine (1 to 100), quinine (1 in 80), and veratrine (1 in 80). It volatilizes without giving off any acrid fumes, burns with a bright flame, leaving no residue. It is insoluble in water, freely soluble in ether, chloroform and benzol, slightly soluble in absolute alcohol. It never becomes rancid. It cannot oxidise; it is unchangeable, hence superior to lard and other fats which are irritating. Caustic alkalies have no saponifying action. Soap and water washes off vaseline. Paraffin molle is known in commerce by various names—Vaseline, Vaseinum, Gelatum petroleum, or Petroleum jelly, an amber-coloured unctuous substance. It is decolorized by repeatedly filtering it through animal charcoal, when it becomes opal-white vaseline, and is known in commerce as vaselinum album; inodorous and unirritating, used for the toilet as a valuable lubricant and protective of the skin. Other similar compounds are adepsine, chrisma, cosmoline, fossiline, ozokerine, geoline, salvo petrolia, &c.

Ceratum Petrolei—Vaseline or Salvo petrolia.—Contains vaselene (white) 2 and paraffin 1, suitable as a basis for ointments. Vaselone—A substitute for vaseline. It is a solution of stearone 5 per cent. and margarone 15 per cent. in neutral mineral oil 100. It is white, odourless, neutral, not affected by acids or chemical agents. Stearone is prepared by distilling stearin with lime and margarone by distilling beef suet with lime. Unguentum Paraffini, B.P.—Paraffin ointment.—Take hard paraffin 3, soft paraffin 7. Melt together, and, when cool, triturate. Liquid vaseline—oil vaseline is a mixture of paraffins and used as a vehicle for hypodermic injections. It or oleum deelinæ is used as a solvent for cocaine (1 p.c.), helenin (1 p.c.), iodine (2 p.c.), iodoform (1 p.c.), thymol (10 p.c.), phenol (1 p.c.), phosphorus (1 p.c.), menthol, camphor, &c.; also for insoluble mercurial salts for hypodermic injection such as calomel (10 p.c.), mercuro salicylate (10 p.c.), mercuro succinate (10 p.c.), mercuro thymol acetate (10 p.c.), and mercuric red oxide (10 p.c.). Its solvent powers are not very satisfactory as in the case of vegetable alkaloids, such as agaricin, hyoscyamine, physostigmine, quinine, salol, &c.

Preparations.—Terrol—Terroline—Terraline.—A product of petroleum. In a fluid form, without any odour. Dose—1 to 2 drs. Emulsio petrolei et hypophosphitum—Contains liquid paraffin 20, acacia 10, and water 14. To this add sodium hypophosphite 1 and calcium hypophosphite 1 and to 100 and triturate. Dose—1 to 4 drs.

Petrolatum.—Petroleum ointment. 3 varieties, having different melting points.

Petroleum Soap.—Contains 25 per cent. of petroleum. Used as an insecticide.

Actions and uses.—Petroleum is non-irritant to the skin wounds, sores in any condition and to the mucous membranes; it is a good solvent and emollient. It is not easily absorbed. It protects the part to which it is applied. Being an emollient, it prevents the formation of hard crusts or débris. It is used as a vehicle for hypodermic injections and as a basis for spray for laryngeal and nasal irritations. As a pigment it is used in coryza, ozæna and other forms of rhinitis; also used as an emollient to the skin and as a lubricant to cutlery and other instruments. Terrol is given internally in phthisis, coughs, cold, pneumonia, &c. It improves the appetite, and increases the weight and strength; although probably not digested, it is in some way assimilated, and acts as an antiseptic and demulcent in the intestinal tract. Rock oil or bitumen or naphtha was used formerly instead of petroleum for similar purposes. Crude petroleum is found in various places, and is known as naphtha, petroleum, seneca oil, Barbadoes tar, Trinidad pitch, &c.

Paraffinum Liquidum, B.P.—Liquid vaseline—Liquid paraffin—Crude petroleum—Liquid petrolatum.

Petroleum, petra rock and oleum oil, the rock oil.

Vernacular.—Beng.—*Matiya tela;* Burm.—*Yennah;* Can.—*Mun-nun yan nch;* Guz.—*Matti-nû tela;* Hind.—*Mitti kâ tela;* Malayal.—*Muntylam;* Tam.—*Mun-yenni muntylam;* Tel.—*Manti tylam, Manti noonch.*

It is a mixture of hydrocarbons, of marsh gas series. Crude petroleum is a substance found in wells on top of streams or oozing from the ground. From this liquid paraffin is prepared by removing the lighter and more volatile portion by distillation or refining. Liquid paraffin is a colourless transparent liquid, without any odour or taste. It does not become rancid, has little or no greasiness; insoluble in water and alcohol, and soluble in ether, chloroform, turpentine, benzene, benzol, and oils. In commerce it is known by various names—adepsine oil, paroleine, oleum deelinæ, glymol. Used as a vehicle for hypodermic injections.

Preparation.—Medicated oil. Contains ol. deelinæ 1 oz., ol. ricini 1 oz., ol. olivæ 2 ozs. Very effective for chronic eczema and psoriasis.

Actions and uses.—Used as a liquid solvent, as a basis for laryngeal and nasal spray solutions or pigments containing menthol, cocaine or other medicaments. Applied in general gouty and scorbutic eczema, varicose veins, congenital ichthyosis, chronic erythematons eruptious, piles and excoriations about the anus, sycosis, &c.

Para-form—Triformal, try-oxy-methylene, paraformic aldehyde.—A polymer of formic aldehyde. A 5 per cent. suspension of paraform in collodion. A white friable amorphous powder, irritating to the nostrils, soluble in boiling water, caustic soda and baryta water, and insoluble in collodion. By combining with the products of combustion and by heating (without exposure to air) it is transformed into formic aldehyde. Dose—1 to 15 grs. in tablets.

Actions and uses.—Antiseptic and disinfectant. As a cautery mixed with collodion it is painted in skin affections as nævi, keloid and other growths. It affects necrosed bone and the dried mass falls off spontaneously. Internally it is given in catarrh of the bowels, in typhoid fever and cholera.

Paraldehydum, B.P.—Paraldehyde.—A polymeric modification of ethylic aldehyde. Prepared by the interaction of dilute sulphuric or nitric acid and aldehyde. A colourless transparent liquid at ordinary temperature. Like glacial acetic acid, it crystallizes at a temperature below 50° F., of a peculiar ethereal

odour and of an acrid and afterwards cooling taste, resembling aldehyde; soluble in cold water (1 to 10), less so in hot water, and freely soluble in alcohol, ether, chloroform, and oils. Dose—½ to 2 drs. In syrup or almond mixture or Capsules.

Preparations.—Spiritus ætheris nitrosi, B.P.—Elixir paraldehydi.—Contains paraldehyde 240, glycerin 240, alcohol (90 per cent.) 480, oil of cinnamon 4, oil of bitter orange 8, saccharin 1. Dose—1 to 3 drs. given internally. Capsules contain 40 ms. each. Dose—1 to 2.

Actions and uses.—Nervine sedative, diuretic, antispasmodic, like aldehyde, but it does not cause any suffocation when respired. As a hypnotic it is similar to chloral, but less permanent, requiring frequent repetition; it leaves no injurious after-effects. It strengthens the heart's action, but diminishes its frequency. It increases the secretion of the kidneys. It causes cerebral excitement, soon followed by a refreshing sleep; this effect results in from 5 to 14 minutes, and lasts 5 to 6 hours. It does not impair digestion. Given in fever, spasmodic asthma, rheumatism and insomnia due to the mental worry or excitement. In nervous disorders, as mania, melancholia, dementia, it acts more as a sedative than anodyne. It is antagonistic to strychnine poisoning. In the nausea of migraine, in delirium tremens, in tetanus, in atheromatous degeneration of arteries, in fatty heart, in vomiting due to ovarian irritation or of pregnancy, in sea sickness, &c., it is given with good results. It is contraindicated in gastric irritation or inflammatory fevers or in inflamed condition of the throat or of lungs.

Pentalum, Pental.—Tri-methyl ethylene.—Isomeric with amylene. Digest amylene hydrate or amylic alcohol with chloride of zinc and diluted sulphuric acid and add water. When pure pental and tertiary amyl alcohol are formed, separate pental by fractional distillation. It is highly inflammable, and unirritant to the throat. A volatile colourless liquid of a strong mustard-like odour. Insoluble in water and freely soluble in alcohol, chloroform and ether, boils at 100° F. Dose—1 to 2 dr. As an inhalation the solution is used as a safe and rapid anæsthetic. Like nitrous oxide it is safe and rapid in action and more persistent. It causes insensibility to pain, but leaves no bad after-effects. It seldom causes any exhilaration and no loss of consciousness. It does not lose its effects by repeated inhalations; compared with ethyl bromide, its effect is slower, but more permanent. With chloroform it acts more promptly or has no evil after-effects. As a local anæsthetic it is used in all surgical operations. Cotton soaked in it is applied in painful teeth. It is also of great benefit in painful neuralgia.

Peronine—Benzoyl morphine hydrochloride.—It is the hydrochloride of the benzyl ether of morphine. Heat together morphia, sodium ethylate, benzyl chloride and absolute alcohol till sodium chloride is precipitated. To the filtrate add benzyl, morphine and hydrochloric acid, when soluble hydrochlorate of benzyl morphia is formed, and acid hydrochlorate is insolated. A good substitute for morphia and codeine. A white powder or colourless lustrous needles. Taste caustic, soluble in water, insoluble in alcohol, chloroform or ether. Dose—⅛ to ½ gr. in pill or in aqueous delution.

Actions and uses.—A substitute for morphine. Respiratory sedative, also hypnotic and anodyne and feeble narcotic; given to allay obstinate cough, also in phthisis, in catarrh and whooping cough. As a hypnotic, it produces sound sleep. Given in the state of excitation, also to relieve rheumatic and neuralgic pains. It is free from all bad after-effects of morphine.

Peruscabin.—An active constituent of Peruvian balsam or balsam of Peru, containing benzoic acid and benzyl-ester in the form of an oil known as peruscabin. The oil is synthetically prepared from balsam of Peru. A pure oil, clear, or viscid, without any odour or taste. Exposed to cold, it congeals into a crystalline form. Forms with castor oil or with olive oil a 25 per cent. solution known as peruol.

Peruol.—A good substitute for balsam of Peru. It is non-irritant, without any odour or colour. It does not soil the linen. Used like balsam as an embrocation, to be followed by a wash with soft soap and warm water.

Petanelle.—A patent preparation of fibrous peat—an absorbent wool. A powerful deodorant and antiseptic; prevents putrefaction and fermentation; used in cases of suppurating wounds and fœtid purulent discharges.

Petrosulfol.—A bituminous preparation. Used as a parasiticide in eczema, acne, favus, and psoriasis. Also given internally in neuralgia, chronic rheumatism, gastric catarrh.

Phenacetinum, B. P.—Phenacetin—Para-acet-phenetidin—Para oxy-ethyl-acetanilid. Obtained by the interaction of glacial acetic acid and para-phenetidin, a body obtained from phenol or from para-nitro-phenol. It is an acetyl compound of phenetidin (the ethyl ether of para-mido phenol, allied in composition to acetanilide (antifebrin). White, glistening, scaly crystals, without odour or taste, very sparingly soluble in cold water (1 in 1400), more so in boiling water, freely so in glycerin and in alcohol (1 in 20). Dose as an antipyretic 5 to 10 grs., as an analgesic 15 to 25 grs., as lozenges 4 grs. each.

Physiological actions and uses.—As an antipyretic it is safer than antipyrin or antifebrin, rapid in its action, harmless, and it does not produce nausea, vomiting, cyanosis, collapse, &c. Used as an analgesic and antithermic it soothes the pain, it lowers the temperature rapidly, lasting some hours, but the subsequent rise is slower. It is given in neuralgia, migraine, headache, sciatica, rheumatism, hysteria, in enteric and rheumatic and other fevers of India, in malarial fevers, sunstroke, eruptive fevers, pneumonia, phthisis, &c.

Phenalgin.—A synthetically prepared ammoniated coal-tar product of the amido-benzene series, chemically known as phospho-ammonio-phenyl-acetamide. A pure white powder having a strong ammoniacal taste and odour; contains ammonia in a nascent state. Used as powder or tablets. Dose—5 grs.

Actions and uses.—Non-toxic. A vascular stimulant, hypnotic, anodyne, antipyretic, antimalarial and germicide. Ammonia is liberated on its entry into the stomach in a nascent state, and thus neutralizes the depression which follows the administration of antipyretics. As a non-toxic it is given in painful menstruation, in insomnia, gastralgia, persistent vomiting, headache from a variety of causes, in various forms of neurosis and hyperacidity of the stomach. In lumbago, sciatica, myalgia and rheumatism its action is similar to that of chloral. Generally given in combination with salicylate of sodium, salol, lycetol, guaiacol carbonate, and creosote; combined with arsenic it is of benefit in phthisis and malarial affections. As a narcotic, phenalgin takes the place of morphia. It calms the acute pain and brings on refreshing sleep.

Phenamid.—A synthetic preparation derived from Trimethylamine. Superior to antipyrin, as it does not depress the heart—a positive vascular stimulant, given to subdue inflammatory fevers.

Phenocoll—Phenol Glycocoll—Amido-acet-para phenetidin—a derivative of phenacetin, a new antipyretic. A combination of glycocoll (amido-acetic acid) and

phenetidin. White, acicular crystals, with a tendency to mat together, slightly soluble in water, ether, benzole and chloroform, freely soluble in alcohol and warm water. Phenocoll hydrochloride—Amido-acet-para-phenetidin hydrochloride—Glycocoll-para-phenetidin hydrochloride. Synthetically prepared by the interaction of phenetidin and glycocoll (amido-acetic acid) or of chlor-acetil chloride on para amido phenetol and by treating the resulting product with ammonia. Chemically allied to phenacetin. White crystalline powder; boiled with acids or alkalies it splits up into phenacetin and glycocoll. It is soluble in cold water (1 in 16), a soluble substitute of phenacetin. Dose—5 to 15 grs. Used in solution or cachets or as injection hypodermically. Phenocoll salicylate-salocoll combines the action of phenocoll and salicylic acid. Dose—10 to 30 grs.

Actions and uses.—Analgesic and antiperiodic. A good and quick antipyretic; reduces the temperature within an hour without producing rigors or sweats. It is more readily absorbed. As a sedative it is used in cases where salicylic acid is contraindicated. Given in hectic, malarial, typhoid and rheumatic fevers influenza, neuralgia, phthisis, but not in gonorrhœa, rheumatism, &c. It is twice as powerful as, and superior to, antipyrin. It has no injurious effect upon the blood corpuscles. It is promptly absorbed, readily excreted, and reduces the febrile heat without producing profuse sweating or any unpleasant after-effects. It is a prophylactic against malaria. In combination with piperazone 15 grs., also useful in gouty affections to relieve pain.

Phenopyrin—Contains phenol and antipyrin in equal parts—an oily liquid without any colour or odour. Sparingly soluble in hot water, insoluble in cold water, used in fevers.

Phenosalyl.—It is a mixture of carbolic, salicylic and benzoic acids in molecular proportions with menthol and eucalyptol, melted together and dissolved in lactic acid. A syrupy fluid, soluble in water (1 in 25) in alcohol and ether; used as aqueous antiseptic 1 to 2 per cent., or as ointment (1 to 2 per cent.), with lanolin or vaseline or as a caustic mixed with glycerin (1 to 1). As an antiseptic and caustic it is superior to carbolic acid, but less toxic. The solution, 1 or 2 ms., is given internally for flatulence.

Phenatol—Contain acetanilid, caffeine, and sodium salts as carbonate, bicarbonate chloride and sulphate. Dose—5 to 15 grs. Given in fevers, influenza, rheumatism, &c.

Phenolid—Contains acetanilid 58 and sodium carbonate 42. Dose—5 to 15 grs.

Phosotol—Creosote-Phosphas—Creosote-phosphate—Contains 80 per cent. of creosote and 20 per cent. of phosphoric anhydride. A syrupy fluid of a faint creosote-like odour and taste, soluble in alcohol and glycerin. Dose—¼ dr. As an antitubercular used like the preparations of creosote, namely, guaiacol, creosole, &c. Given in tuberculosis. Under its use the weight increases, expectoration lessens and the quantity of urine increases and becomes more acid. The fact that deficient acidity of urine favours the development of the tubercular bacillus and that hyperacidity in the urine interferes with the development of specific microbes has led in tuberculosis to give creosote phosphas as it increases the acidity of the urine and hence beneficial in preventing development of the bacillus.

Piperidinæ Guaiacolas—Piperidine Guaiacolate Guaiperol.—A compound prepared by the action of piperidine on guaiacol. In granular colourless crystals, odour slightly creosote-like. Soluble in water (1 in 30), freely so in alcohol. The solution is decomposed by mineral acids and alkalies. Given in solution. Dose—5 to 30 grs. in phthisis. It improves appetite and general strength.

Piperazine—Piperazinum—Di-ethylene-diamine—Ethylenimine—Di-Spermine, Hexa-hydro-pyrazine.—A synthetical representative of the base, obtained from spermatic fluid in which it exists in combination with phosphoric acid. It is said to be identical with spermin. Prepared by the interaction of ammonia upon ethylene chloride and subsequent fractional distillation or by the action of sodium glycol on ethylenediamine hydrochloride. Colourless, deliquescent alkaline crystals, of a faint odour and of a saline taste—soluble in water, liquefying when exposed to the air from which it absorbs water and carbon dioxide—non-poisonous and non-caustic. Dose—4 to 10 grs. well diluted or in ærated water; injected hypodermically in 3 to 5 per cent. solution.

Preparation.—Granular effervescent piperazine 5 grs. in 1 dr. Dose—1 dr. Granular effervescent piperazine with phenacol 5 grs. in 1 dr. Dose—1 dr. Lithia piperazine citrate. Dose—5 grs. Lithia piperazine bitartrate. Dose—5 grs. Lithia piperazine and potash citrate. Dose—5 grs. Piperazine salicylate specific in gout and rheumatism. Dose—5 to 10 grs.

Actions.—Diuretic, antirheumatic, antilithic and lithon triptic. Piperazine has great solvent power on uric acid, forming piperazine urate, and hence used in gout, rheumatism, urinary calculi and uric acid diathesis. In renal or urinary calculi it may be injected into the bladder in 2 per cent. solution, being quite unirritating to the mucous membrane; it dissolves 12 times as much uric acid as an equal weight of lithium carbonate, and the urate formed is much more soluble. It passes through the system unchanged, combining only with the uric acid, and is found in this form in the urine. It does not allow uric acid or water to deposit from the acid urine. Reputed to have an aphrodisiac effect.

Piperonal.—An aldehyde analogous to piperonilic acid—obtained by the oxidation of piperine. In small white crystals, odour resembling that of vanilla. Insoluble in water, soluble in alcohol and ether. As an antipyretic and antiseptic it is given in ague and in cases of foul breath, fœtid stools, &c., but it causes nausea, dryness of the throat and eructations. Dose—10 to 20 grs.

Pixine.—A combination product of ichthyol, tar, turpentine, and Burgundy pitch with wool tar as its base. The ointment is a safe absorbent and used as an antiseptic dressing in syphilitic ulcers, varicose veins, burns, contusions and wounds. It is non-irritant.

Protargol.—It is a solid organic preparation of silver combined with certain proteids; it is neither a simple or a double salt. A fine light yellow powder, easily soluble in cold or warm water and in glycerin. A 50 per cent. solution is dark-brown and of the consistence of balsam. It is non-irritant, unlike other silver compounds as nitrate of silver, argentamine and organine, &c. It is not decomposed by alkalies, by sulphur, albumen or sodium chloride. It does not penetrate deeper into the tissues. 2 drs. of it contain 15 grs. of nitrate of silver or 8 per cent. of metallic silver. Its solution containing 75 grs. of protargol well triturated in 150 ms. of glycerin and 3 ozs. of water; is used as a paint also as 1 per cent. solution, or as ointment (1 to 20).

Actions and uses.—A painless bactericide, antigonorrhœic. Given as an injection 1 to 2 per cent. in acute gonorrhœa, and 5 to 10 per cent. in chronic gonorrhœa. In naso-pharyngeal and laryngeal catarrh and in chronic laryngitis, it is used as an injection or a paint or douche for the nose. The ointment is used in suppurating ulcers, wounds and burns.

Pyoktanin.—Methyl violet, an aniline dye. A mixture of methyl-para-ros anilines. Pyoktanin blue. Penta and hexa-methyl-para-ros-aniline hydrochloride.

A non-poisonous crystalline violet powder, nearly odourless, diffusible in animal fluids, soluble in water (1 in 75), in alcohol (1 in 12), insoluble in ether, in glycerin (1 in 12). It stains the skin. Another variety—Pyoktanin yellow-apionine auramine. Amido-tetra-methyl-diamido-diphenyl. Both are methane hydrochlorate. A yellow powder, soluble in water and alcohol. Used as a wash (1 in 1000). As a dusting powder. As an injection (1 in 500), ointment 2 per cent. Blue for surgical and yellow for eye diseases.

Actions and uses.—Bacteria readily absorb aniline dyes and die. Hence pyoktanin is antiseptic, disinfectant, antigonorrhœal and a local anodyne; as an antiseptic it is used as a wash or a dusting powder for eye diseases and ulcers As an injection it is used in obstinate chronic cystitis, in throat and nose affections, in gonorrhœa, leucorrhœa, ulcers, burns, in cancrum oris, malignant growths, carcinoma and uterine sarcoma. As an ointment, it is used for ulcerated and diseased surfaces.

Pyraloxin—Oxidized pyrogallic acid.—Expose pyrogallic acid to the action of the air and to ammoniacal vapours. Occurs as a deep brown or black powder. Does not stain the skin. As a parasiticide it is used in psoriasis, eczema, &c.

Pyretine.—It is a mixture of acetanilid, caffeine, sodium carbonate and chalk. Dose – 5 to 15 grs. Given in fevers and diarrhœa.

Pyrantin—Ethoxy-phenyl-succimide.—An antipyretic, sparingly soluble in water, insoluble in ether.

Pyridina—Pyridine.—A liquid alkaloid, a base obtained by dry destructive distillation of bones and many other organic substances. A colourless mobile liquid, of penetrating empyreumatic odour, evaporating when exposed to the air. Freely miscible with water, alcohol, ether, chloroform and fatty oils, forming soluble crystalline salts with acids. Chemically related to vegetable alkaloids as cocaine. It is contained in, and combined with, nicotine in the fumes of tobacco. Dose—2 to 10 ms. As an inhalation for asthma, 60 to 80 drops (burnt in a plate placed in a room); for urethral injection ½ per cent. solution; for paint, 10 per cent. solution.

Actions and uses.—Antiseptic, antigonorrhœal, expectorant and cardiac excitant. Used with success in dyspnœa of asthma, whether nervous, amphysematous or catarrhal. It should not be used if the heart is weak; believed to be the active ingredient in various asthmatic cigarettes and powders. It has also been used as an inhalation in angina pectoris, asthma, cardiac failure, gonorrhœa, &c.

Pyrodin.—An impure preparation of hydracetin. Heat together phenyhydrozone and acetic acid—Colourless shining prisms or white powder or crystals of a silky lustre, without any odour or taste, soluble in (1 in 50) of cold water and freely soluble in alcohol, chloroform and hot water. It contains 25 per cent. of hydracetin. Dose—½ to 2 grs. Used as ointment 10 per cent.

Actions and uses.—Antipyretic, analgesic, antiparasitic and antiseptic. Internally given to reduce fever in tuberculosis. As an analgesic it is useful in neuralgic and gastric pains, also in relieving night sweats in phthisis. Externally the ointment is used in psoriasis and other skin diseases.

Pyramidon—Dimethyl amido. Antipyrin.—A derivative of antipyrin obtained by a substitution process. A yellowish-white powder, soluble in water (1 in 10). Antipyretic and analgesic, a good substitute for antipyrin. It is slower in action, but more certain and permanent in its effects. Leaves no unpleasant after-effects. Dose—3 to 8 grs.

Pyrosal.—Salicyl Acetate of antipyrin. Contains 50 per cent. of antipyrin. A white powder, sparingly soluble in water, alcohol and ether. As an antipyretic and antineuralgic it is used in articular rheumatism, cystitis, migraine, sciatica, &c. Dose—5 to 10 grs.

Quinalgen—Ortho-ethoxy Ana-mono-benzoil- Amido quinolin. A derivative of quinolin or chinolin. A coal-tar product, same as analgen, but substituting acetyl by benzoyl radicle. Properties are similar to those of antipyrin, but leaving no bad after-effects. Given in gout, influenza, migraine, neuralgia and rheumatic pains. Dose—8 to 15 grs.

Quinoral—A compound of quinine and chloral, an only viscid liquid, has a neutral reaction and very bitter taste; soluble in aqueous and spirituous liquids. Non-irritant, does not affect the heart. Used as an antiseptic. Dose—8 to 15 grs.

Quinoidine.—Chinoidinum.—A mixture of amorphous alkaloids. A biproduct in preparing salts of cinchona alkaloids. A brownish-black resin-like substance, fracture vitreous, insoluble in water, soluble in acid solutions. Taste nauseous. Used as febrifuge. Dose—1 to 5 grs.

Retinol—Rosinal—Resinol—Rosin oil. A liquid hydrocarbon, a coal-tar product obtained from dry distillation of fir resin and Burgundy pitch. A viscid brownish-yellow liquid, of bitter taste, soluble in alcohol, ether, oil of turpentine, balsams, fatty oils, glycerin, lanolin, &c. It dissolves camphor, naphthol, carbolic acid, cocaine, iodol, salol, aristol, phosphorus, creosote, &c. Dose—4 to 8 ms. Used as capsules, emulsion, alcoholic solution or in olive oil and ointment (unguentum resinol) containing 10 to 50 per cent. of pure lanolin and petroleum as a base.

Actions and uses.—As an antiseptic given alone or mixed with salol in gonorrhœa, as an antipruritic and local antiphlogistic it is given as a healing agent in eczema, erysipelas, seborrhœa, psoriasis, herpes, acne, erythema, &c. As a local antiseptic it is used on specific sores and lesions. It has also been used with benefit in cracks and fissures of the nipples, lips, anus, &c., also in inflammation and erosion of the os and cervix, and catarrh of the nasal passages. In itching and burning pain of vulvitis, balanitis and pruritus ani, pruritus vulvi, &c., resinol is a very harmless and non-irritant agent. It is also used as an injection in gonorrhœa. An excellent medium (excipient) for the internal administration of phosphorus.

Resina, B. P.—Resin or Rosin (colophony)—A residue left after distilling off the volatile oil from turpentine. Occurs in semi-transparent pieces of various shapes and sizes; hard, light and somewhat sticky. Colour varies from light yellow amber to light brown or red, surface smooth and shining, very brittle and easily pulverizable; odour and taste balsamic or terebinthinate; soluble in alcohol, ether, benzole and carbon bisulphide; also fusible and burning with a dense yellow flame and produces much smoke.

Constituents.—Anhydride of abietic acid which, when shaken with warm diluted alcohol, is converted into albeitic and also pinic, sylvic acids. Other resins are resinæ copabæ, jalapæ, podophylli, &c.

Preparations.—Ceratum resinæ—Resin cerate. Basilicon ointment contains resin 35 per cent., yellow wax 15 and lard 50. Turpentine liniment contains resina 65 per cent. Emplastrum resinæ. Resin plaster.—Adhesive plaster contains resin 14, lead plaster 80, yellow wax 6. Resin is also an ingredient of arnica, belladonna and capsicum plasters and of cantherides cerate.

Actions and uses—Diaphoretic and stimulant. It is sometimes given in gleet. Locally used in the preparation of pectoral plasters. Its paste is applied to buboes and abscesses to promote absorption. Used as a fumigatory for unhealthy ulcers. Other actions and uses are similar to those of gugula.

Resorbin—An ointment basis—a mixture of almond oil, wax, gelatine, soap and lanoline. Being rapidly absorbed by the skin, it forms a suitable mediu for medicaments for skin diseases.

Resorcinum — Resorcin — Resorcinol — Meta-di-oxy-benzol — Oxyphenol, diatomic phenol, poor man's quinine. A derivative of phenol or benzol and isomeric with pyrocatechin and hydroquinone. To prepare it, fuse galbanum, guaiacum, ammoniacum, asafetida and such other resins with caustic alkali as potash, soda, &c., or fuse benzene with sulphuric acid and water, neutralize the solution with milk of lime and add sodium carbonate ; another method—fuse potassium benzol disulphonate with caustic potash, filter, evaporate to dryness and extract the residue with ether. The impure resorcin is next sublimed or re-crystallized. Occurs as colourless, pure white, small, needle-shaped crystals or prisms, resembling benzoic acid in appearance, becoming reddish on exposure to the air or by keeping, without any odour and of a sweetish pungent taste. Very volatile, of neutral reaction, soluble in water (1 in 1), in alcohol (2 in 1), in ether, glycerin and in olive oil (1 in 20). Dose—5 to 20 grs. As an antipyretic 20 to 40 grs. Used as injection (1 in 20), solution 1 to 10 per cent. Unguentum Resorcini.—Resorcin, oxide of zinc and starch, each 5 parts, vaseline 10 parts. Plaster mulls—$\frac{3}{4}$ of a grain of resorcin to the square inch. Lotio Resorcini—Resorcin 1, ether 1, castor oil 1, eau-de-cologne 10, alcohol 35. Pasta Resorcin—Resorcin 20, zinc oxide 20, wheat starch 20, liquid paraffin 40.

Physiological action.—Allied to carbolic acid, but non-irritant and more soluble. It is antipyretic, deodorizer, antifermentative, antiseptic, anti-emetic, antizymotic and antispasmodic. It arrests decomposition and destroys low organisms. Externally it is a caustic. Applied to the mucous membrane it causes vesication. As an antipyretic it reduces the temperature, but it rises after a rigour in 2 or 4 hours. Its action is more allied to quinine than to antipyrin. It causes profuse perspiration almost like pilocarpine, and thus acts as a depressant. In large doses it causes deafness, dizziness, confused vision, unconsciousness, chronic convulsions, depressed pulse and even death from paralysis of respiration.

Therapeutics.—As an antipyretic it is given in malarial, puerperal and intermittent fevers. As an antiseptic it is used in diarrhœa of children, in asthma, in whooping cough and cholera infantum. As a hypnotic it has been used in cases where chloral, morphia, paraldehyde, piscidin, &c., are contra indicated. Given in 10 gr. doses it checks nausea, vomiting and diarrhœa, in phthisical patients and in persons subject to sea sickness. Given with benefit in cases of intense pain of biliary or vesical calculi. It is free from irritation and therefore used internally and also sub-cutaneously with benefit in gastralagia, dyspepsia, gastric catarrh, gastric ulcers, fermentative indigestion, &c. It is sometimes given as an anthelmintic. A 1 per cent. solution is used in surgical dressings and as a gargle. A 50 per cent. solution is a valuable application as a caustic to syphilitic sores and other skin diseases and is superior to nitrate of silver. The ointment is applied in acne. A 10 per cent. solution or a spray (1 in 50) is used as a solvent for diphtheria, tubercular ulcerations of the larynx, in rhinitis, &c. A 5 per cent. solution is employed hypodermically in erysipelas; a paste of it with zinc oxide and glycerin (1 in 10) is used in acne rosacea of the face, freckles, &c. It is a good remedy in acute tonsillitis and

catarrhal irritation of the fauces. In otorrhœa, a powder composed of resorcin and boric acid (1 to 20) or a 5 per cent. solution of resorcin is used with good effect. In bubo a 5 per cent. solution injected into the gland is useful. In orchitis and epididymitis a 5 per cent. solution is locally applied with good results. In cystitis its injection has a curative power. In condylomata, warty excrescences on the genitals, under the application of powdered resorcin, the new growths disappear. Resorcin rectal suppositories are used for internal hæmorrhoids, fistula of the rectum, &c. In endometritis, uterine catarrh and in ulcers of the cervix, a 50 per cent. solution applied to the affected part arrests discharges—vaginal, leucorrhœal or gonorrhœal.

Resorcinol.—A compound of Resorcin and Iodoform, a red brown powder sparingly soluble in water, more readily soluble in ether. A substitute for iodoform. Used as an antiseptic dressing for wounds.

Saccharinum—Saccharin, Glusidum-Gluside, B.P. Glukusin—Neo-Saccharin Glusimide; Benzoyl-ortho-sulphonic Imide; Acidi Anhydro-ortho-sulphamide-Benzoique. A sweet imide derivative of toluene, a coal-tar product from which it is prepared by a complicated process. A light white amorphous powder of a very sweet taste and of a faint flavour of bitter almonds; soluble in cold water (1 in 400), in boiling water (1 in 24), in alcohol (1 in 25), in ether (1 in 100), in glycerin (1 in 50), and slightly so in chloroform; freely soluble in solution of ammonia and in solution of bicarbonate of sodium with the evolution of carbon anhydride. Owing to its intense sweetness and its harmlessness it is used for disguising the taste of nauseous drugs as salicin, cascara, &c. It has 300 times the sweetening power of sugar. The pure product is a crystalline powder, 500 times sweeter than sugar and giving flavour to 70,000 its weight of water. Dose—½ to 3 grs. With alkaloids and metallic bases it forms sweet crystalline salts. Cocaine saccharis, shaccarite of cocaine.—A combination of cocaine and saccharin. Used as an application for the throat.

Soluble Saccharin,—Saccharinum solubile—Soluble gluside. To obtain it, neutralize a hot solution of sodium-bicarbonate with gluside and evaporate it to dryness. 100 parts of gluside yield 113 parts of soluble saccharin. Yellowish-white granular crystals, soluble in water (1 in 15). Contains 90 per cent. of saccharine. Dose—½ to 2 grs. Used as tablets. Tabellæ saccharini ½ gr. of saccharine in each. Saxin tablets ½ gr. saccharin in each. Elixir saccharini, elixir of saccharin:—Saccharin 24 grs., sodium bicarbonate 12 grs., alcohol 1dr., water 8 drs. 1 dr. contains 3 grs. of saccharin.

Actions and uses.—Antifermentative and antiseptic. It is not a food and has no injurious action on man. It is eliminated in the urine and saliva without change. It replaces sugar or carbo hydrates in the food of persons suffering from hepatic disease, corpulence and diabetes. It is an agent or corrective for the taste of bitter and nauseous medicinal substances, such as quinine, nux vomica, cascara, salicin, &c. It is also used in indigestion, gastric catarrh, where abnormal fermentation and acidity exist—sometimes as an antiseptic it is given to stop decomposition of urine as in cystitis. In Bright's disease, gouty diathesis and in general obesity it is of great benefit. Where sugar cannot be tolerated, prescriptions are prepared by saccharin taking the place of sugar, *e.g.*, confectio sulphuris glusidata, mistura spiritus vini gallici glusidata.

Sal Acetol—Acetol salicylate. An artificial glucoside of salicylic acid—a salicylic ester of acetone alcohol. To obtain it, heat together sodium salicylate and

monochlor acetone. In needle-shaped mica-like light shining crystals; taste bitter, soluble in alcohol (1 in 15), castor oil (1 in 25), and olive oil (1 in 30); freely soluble in caustic alkaline solutions which decompose it and form salicylates. Used in catchets or suspended in castor oil. As an unirritating, non-toxic, antirheumatic and antiseptic, it decomposes very quickly in the system, yielding salicylic acid. It is free from the elimination of phenol which constitutes the danger of salol; given in choleraic diarrhœa, rheumatism and in putrid and fœtid discharges from the urine and bowels. Dose—10 to 25 grs.

Salactol.—A compound of the sodium salts of salicylic and lactic acids, dissolved in solution (1 per cent.) of hydrogen peroxide. It is used as a pigment and gargle for diphtheria. It should not be confounded with sal acetol.

Salicylamide.—The amide of salicylic acid. A combination of acetanilid and salicylic acid—obtained by the action of concentrated ammonia on oil of gaultheria—Small, white, acicular crystals or powder, soluble in water (1 in 200), readily soluble in alcohol, chloroform and ether. Without any taste. Dose—2 to 6 grs. in cachets. As an analgesic more prompt than salicylic acid, and given in smaller doses for the relief of rheumatic pains.

Salicinum, B.P.—Salicin—A glucoside obtained from the back of various species of willow (salixalba) the poplar (populus) and in the flower buds of meadow sweet. As methyl salicylate it is found in the volatile oil distilled from the leaves of Gaultheria Procumbens, from the bark of Betula Lenta (the sweet berch) or from Andromeda Leshnaultii (Indian plant), &c. Acicular, shining, silky needles or powder, neutral reaction, without any odour but bitter taste. The bitterness disappears on addition of liquid extract of liquorice and alcohol. Soluble in water (1 in 28), in 0·7 of boiling water, in boiling alcohol (1 in 2), in spirit (1 in 60). Insoluble in ether or chloroform. Becomes red by the addition of sulphuric acid. When ignited, it emits the odour of meadow sweet. Dose—5 to 20 grs. in pill with glycerin.

Preparations.—Aqueous solution (1 in 5).

Actions and uses.—In small doses it is a mild tonic. In large doses antirheumatic. As an antipyretic it is combined with ammonium carbonate and given in ague and in pyrexia of phthisis. In influenza and other infectious diseases it is very efficient. Under the influence of the ferments in the body it splits up in the bowel into saligenin and glucose, saligenin, becoming oxidized into salicylic acid.

Salicylanilide—Salifebrin.—A mixture containing antifebrin and salicylic acid in molecular proportions. A white powder of acid reaction. Insoluble in water, soluble in alcohol. Antirheumatic and antipyretic; like salipyrin it is given in articular rheumatism, fever with scanty urine loaded with uric acid. Dose—10 to 15 grs.

Saligallol.—A solid resinous body, soluble in acetone and chloroform. Applied to the skin it forms a firm adhering varnish. It is generally combined with eugallol to increase its active properties.

Saligenin.—Ortho-oxy-benzilic alcohol—Salicylous alcohol. A decomposition product of salicin. Synthetically prepared like salicin and salicylic acid from carbolic acid by heating it with caustic soda and passing carbonic acid gas through the liquid. A white powder of acid reaction. Used as antiseptic, antirheumatic. Similar to salol and soda salicylate. It is free from the injurious effects of salicylic acid. Dose—7 to 15 grs.

Salipyrin.—Antipyrin salicylate. Salicylate d' analgésine. Heat together antipyrin 42·3 and salicylic acid 57·7 in molecular proportions. Dissolve in alcohol and crystallize. White crystalline powder, of a sweetish taste, nearly insoluble in ether, in cold water (1 in 200), in boiling water (1 in 25) and freely soluble in alcohol and chloroform, easily decomposed by acids or alkalies. Dose—15 to 30 grs. As an antirheumatic, analgesic and antipyretic, used in chronic rheumatism, sciatica, influenza and catarrh, also in menorrhagia. It is superior to antipyrin. Like antipyrin it does not cause profuse perspiration, loss of strength and weakness of the heart. It is superior to salicylate of soda, as it does not produce nausea nor gastric disturbance.

Salitannol.—A condensation product of salicylic and gallic acids. A white amorphous powder, insoluble in water, ether, chloroform, or benzene: sparingly soluble in alcohol, freely soluble in alkaline solutions. Used as antiseptic like salicylic and astringent like tannic acid. Used as a dusting powder on sores, abrasions and wounds.

Salocoll—Phenocoll Salicylate—Phenocollum Salicylicum.—White silky crystals, of a sweet taste, soluble in hot water, less soluble in cold water than phenocoll hydrochloride. As an antipyretic and antineuralgic it combines the action of salicylic acid with that of phenocoll. Does not cause any gastric disturbance. Dose—10 to 30 grs.

Salol, B.P.—Salolum. Phenyl salicylate—Phenyl ether of salicylic acid.—It is composed of phenol or carbolic acid and salicylic acid. Treat sodium phenolate and sodium salicylate with phosphorus oxychloride; dissolve in alcohol and crystallize; or heat salicylic acid in a closed vessel. The acid is converted into salol, water, and carbonic acid.

A white crystalline powder of a faint aromatic odour, like that of winter green, and without any taste—soluble in chloroform, fixed and volatile oils, in alcohol (1 in 10), a trace in glycerin, in ether (2 in 1), and nearly insoluble in water. Warmed with an alkali it separates into salicylic acid 60 and carbolic acid 40. Dose—5 to 15 grs. in cachets or suspended in milk.

Preparations.—Collodium salol. Salol collodion contains salol 4, ether 4, and collodion 30, a good application for acute rheumatism. Salol cum camphora—salol 3, camphor 2. A non-irritating viscid liquid, insoluble in water; as an antiseptic like naphthol camphor or iodoform it is used in suppuration of the middle ear. Salol gauze—10 per cent. of salol impregnated by means of turpentine and alcohol. Salol pill varnish, salol coating for pills, contains salol 2, shellac 3, absolute alcohol 3 and ether 3; or salol 4, tannin 1, and ether 20. The coating is insoluble in the gastric juice, but soluble in the alkaline fluid of the intestines. Unguentum salol cum cocainæ—Salol 2, cocaine hydrochloride 1, petroleum cerate 16. For burns.

Unguentum salol cum cocainæ—Salol 2, cocaine hydrochlorate 1, ceratum petrolei 16, used in burns.

Actions.—Antiseptic, antipyretic and anti-rheumatic, antigonorrhœal and analgesic. It is slowly excreted. It should not be given in very large doses, and should be accompanied by sodium sulphate. Taken into the stomach it passes unchanged till it reaches the duodenum or other parts of digestive tract where it splits up into phenol and salicylic acid. If taken for a long time, the urine becomes greenish and dark-coloured. Used with advantage in place of sodium salicylate.

It is used to remove excess of uric acid from the urine and is chiefly given in acute rheumatism, myalgia, lumbago, sciatica, headache and other neuralgic affections. In locomotor ataxia, in vomiting due to irritable stomach, salol is now extensively employed. As an antiseptic dusting powder like iodoform, it is used for excoriated surfaces and fœtid wounds. With bismuth it is largely used in diarrhœa and dysentery. It renders the urine aseptic. Combined with balsams as copaiba and sandal-wood oil it is given in gonorrhœa and vesical catarrh. For its germicidal action it is used as an intestinal disinfectant in cholera. As an antipyretic like salicylate of sodium it lowers the temperature, and is given in fevers and in pharyngitis, tonsillitis and sore throat. It is contra-indicated in acute and chronic renal diseases. Externally as an insufflator, its solution dissolved in alcohol, turpentine or cotton-seed oil or mixed with fats or vaseline is used in ozæna, otorrhœa, fœtid wounds, chancres, &c.

Salophen—Acetyl para-amido-salol—Acetyl-para-amido-phenyl-salicylic ester—Para-amido-phenol salicylate.—Prepared by reducing para-nitro-phenol salicylate (prepared by the interaction of salicylic acid and para-nitro-phenol), whereby amido-phenol salicylate is formed and by further acting upon it by acetic acid. Small white scales without odour or taste, decomposed by alkalies into salicylic acid and acetyl-para-amido-phenol. Soluble in alcohol, ether and alkalies, almost insoluble in water. Contains 51 per cent. of salicylic acid; in cachets. Dose—10 to 20 grs.

Actions and uses.—Intestinal antiseptic and analgesic, non-toxic in its action upon the organism. A good substitute for sodium salicylate or salol. It replaces salol. Its action is quick and sure. Given in influenza, headache, migraine, pleurodynia, pyelitis, cystitis and sciatica. It is used with great success in chorea, acute articular rheumatism, typhoid fever and cholera. In these cases its action is just like that of salol, but much safer. As an antipyretic it is sometimes used in galloping phthisis. As an intestinal antiseptic it is unaffected by gastric juice, but decomposed by pancreatic ferment: hence used in diarrhœa and cholera.

Saloquinine—Quinine Ester of Salicylic Acid.—An odourless and tasteless powder, without any ill-effects of quinine on digestion. Given in neuralgia, neurosis and typhoid fever. Rheumatine is the salicylate of saloquinine; used as antirheumatic and antipyretic, chiefly in acute rheumatism.

Salosantal.—A combination of salol with sandalwood oil, to which peppermint oil is added to cover the taste. It contains 33 per cent. of salol. As an antibacterial, sedative and disinfectant it is given in all diseases of the urethra and of the bladder, as urethritis, cystitis, epididymitis, &c. Dose—10 to 20 drops.

Saluminum—Salumin—Insoluble Salumin—Aluminium Salicylate.—A fine reddish crystalline powder, slightly soluble in water. Used as a dusting powder or as solution in glycerin. As a soothing, antiseptic, astringent and stimulant of the mucous membrane, it is used in inflammation of the mouth, throat and nose.

Saluminum Solubilis.—Soluble Salumin—Aluminium Salicylicum Ammoniatum.—A compound containing salumin and ammonia. A yellowish-white powder, easily soluble in water (1 in 9), of neutral reaction. As a dusting powder or solution in glycerin it stimulates the mucous membrane very powerfully, and is used in nose and throat affections.

Sanitas—Disinfecting fluid.—An aqueous solution, resulting from the action of water upon turpentine oxidized by exposure to the air. It contains as its active principles peroxide of hydrogen, thymol and different varieties of soluble camphor and camphoric acid. A clear, colourless solution, of a fragrant odour.

Sanitas Oil—Is an air-oxidized turpentine, but the oxidation is conducted in the presence of water. A yellowish-red oleaginous fluid, having an aromatic camphoraceous odour, perfectly miscible with petroleum bases, oils, fats and waxes and contains an organic peroxide which gives it an oxidizing strength equal to that of a 10 volume of solution of hydrogen peroxide. Used as emulsion mixed with acacia, oils, fats and petroleum bases. As a disinfectant (1 in 50) of water.

Actions and uses.—Sanitas oil has high oxidising power, and is a most powerful antiseptic, disinfectant and germicide. As an antiseptic it is equal to carbolic acid, thymol and iodoform; it is neither poisonous, caustic, nor irritating, nor does it produce any stain on delicate fabric. As a marked hæmostatic it is used in wounds, ulcers with purulent discharges. As a deodorant and disinfectant mixed with sawdust or diluted with alcohol, it is sprinkled or sprayed in a room, and it purifies the air of sick rooms. As a germicide it destroys the skin parasites as scab, lice, fleas, maggots. In cancers it destroys the fœtor and relieves pain. As a fumigator and vaporizer it is used in affections of the lungs and throat. The thick, tenacious expectoration of chronic bronchitis is lessened by it; as an inhalation it is used in diphtheria, laryngeal and pulmonary phthisis and in asthma, and is equal in efficacy to oil of Pinus Sylvestris and of Eucalyptus Globulus. In whooping cough, an embrocation of sanitas oil with oil of cloves 1 to 5 is rubbed over the chest and spine with great relief.

Sanmetto is a mixture containing santal oil, saw palmetto combined with aromatics. Dose—1 dr. A tonic for the reproductive system, it is given in irritability of the bladder, urethral diseases, ovarian pains, gonorrhœa, enuresis, cystitis and in wasting of the testes due to masturbation or in sexual impotency.

Sanoform—Methyl-di-iodo-salicylate.—Obtained by the action of iodine on gaultheria oil. Non-toxic, non-irritant, white needles, without any odour or taste; decomposed by keeping or exposure to the air. It is not decomposed by heat. Soluble in hot alcohol, ether, vaseline and collodion; used as an ointment (10 per cent.) or solution (1 per cent.) in collodion. As an antiseptic it is a good substitute for iodoform. As a desiccant it is used in the treatment of wounds and ulcers on the genitals.

Saprol—Disinfection oil.—Composed of crude cresols combined with liquid hydrocarbons obtained from the refining of petroleum. A dark-brown, oily mixture, highly inflammable and floating on water as an oily film. It floats on water, and yet it gives up the soluble constituents as disinfectants to the offending fluid, leaving the remainder as an oily film on the surface to prevent the escape of disagreeable odours and the spread of infecting spores. A very useful disinfectant in schools, public places, sewers, &c. Sewage thus treated still retains its value as a manure. 1 per cent. of it sterilizes urine, fœces, &c., impregnated with micro-organisms as the bacilli of cholera, typhoid fever, &c.

Liquor Sedans—Contains viburnum prunifolium 2, hydrastis canadensis 2, piscidia erythrina 1, and aromatics. Dose—½ fld. dr. Used in capsules. As an utero-ovarian sedative and anodyne it is given in dysmenorrhœa, ovarian irritability and other uterine and ovarian irregularities.

Sedatin—Para-valeryl-amido-phanetol.—Obtained by the interaction of para-amido-phenatol on valeryl chloride or valerianic acid. Occurs in crystals or needles, slightly soluble in acetone, ether, chloroform. Used as a sedative and anti-neuralgic. Given in hysteria and rheumatism. Dose—1 to 5 grs.

Seng.—An active principle of the root of Panax or Chin Seng. It promotes secretions of the entire alimentary canal, stimulates the glands and increases the activity of the absorbents.

Sidonal.—An hippuric acid forming compound. A combination of quinic acid 81 per cent. and piperazine 18 per cent. A white powder soluble in water. Used as an antilithic and uric acid solvent in gout, rheumatism and in uric acid diathesis. Dose—30 to 90 grs. Other hippuric acid-forming compounds are chinatropine, quinic acid, benzoate of soda and cinnamate of soda.

Sodii Cresotas—Sodium cresotate.—A white micro-crystalline powder, slightly soluble in water, less powerful than sodium salicylate. An intestinal antiseptic, and antipyretic, given in rheumatism, pneumonia; also useful in gastro-intestinal catarrh in children. Dose—2 to 10 grs.

Sodii Ethylas.—Sodium ethylate.—Dissolve metallic sodium in ethylic alcohol and crystallize. A deliquescent caustic salt, a white or brownish powder.

Preparations.—Liquor sodii ethylatis, B.P., solution of sodium ethylate (1 to 8 of alcohol). A colourless syrupy liquid, becoming brown by keeping. A very useful escharotic, causing little or no pain, should be applied with a glass rod only. Used for vascular growths, such as nævi, warts, lupus, &c.

Sodii Paracresotas—Paracresotate of sodium, cresotinate of sodium. A sodium salt of cresotic acid, homologue of salicylic acid obtained from cresol. A crystalline powder soluble in warm water (1 in 24). Taste bitter. Dose—½ to 1 gr. in children, 5 to 15 grs. in adults. Used as solution.

Actions and uses.—Antipyretic, intestinal antiseptic, analgesic, antirheumatic; similar to sodium salicylate. A very safe and reliable antipyretic, given in fevers, especially for children. As a sedative it is given in acute gastro-intestinal catarrh, in acute rheumatism, pneumonia and typhoid fever.

Sodium Tetraborate.—A new preparation obtained by heating together equal parts of boric acid, borax and water. It has a neutral reaction, a more soluble form of boric acid. It forms hard crusts upon dressings which irritate abraded surfaces.

Solphinol.—A mixture of borax, boracic acid and sulphurous alkalies. A white crystalline powder. Soluble in water (1 in 10), in glycerin (1 in 20). The solution, 2½ to 10 per cent., is used as a disinfectant.

Solutol and Solveol—German specialities, containing cresols combined with sodium. Used as solution ½ per cent. As surgical antiseptic and disinfectant.

Somnal—Ethylated chloral urethane. A complex body. An alcoholic solution of ural or a compound of chloral, alcohol and urethane, differing chemically from chloral urethane. A colourless liquid, on evaporation depositing needle-shaped crystals, highly deliquescent and of a bitter taste. Like chloroform it readily forms globules in water; soluble in alcohol (3 in 1), sparingly soluble in hot water, insoluble in water. Dose—15 to 30 ms.

Actions.—A safe and reliable hypnotic and sedative. It produces no gastric disturbance and induces a quiet sleep in half an hour, lasting for 6 or 8 hours. It acts better where insomnia is dependent on cerebral depression than cerebral excitement. It causes no depression of the circulation or respiration. As a sedative it is given in whooping cough, asthma, spasmodic laryngitis, chorea with decided benefit. It should not be given in acute cases or where the stomach is disordered.

Sonatogen.—A compound of lactalbumen 95 per cent. with glycero-phosphoric acid 5 per cent. It is a product of decomposition of nerve tissues. It has a special influence on the nervous system. It strengthens and nourishes the nerves, revives the relaxed organism, and produces high nutritive effect. Given in nervous debility, neurasthenia and anæmia. As a galactagogue it increases the quantity of milk with great success. Dose—1 to 2 drs. with cocoa, milk, soup, &c.

Sozal.—An aluminium salt of paraphenol sulphonic acid. Pale, reddish-brown mass or a fine white powder. Taste strongly astringent; soluble in water, alcohol and glycerin. Used as antiseptic lotion in 3 per cent. solution. Properties are similar to those of carbolic acid. Dose—3 to 8 grs.

Sozoiodol.—Sozoiodolic acid—Di-iodo-paraphenol-sulphonic acid.—Heat together phenol and sulphuric acid; paraphenol-sulphonic acid is formed; treat with iodine. It is a combination of three powerful antiseptics—iodine 54 per cent., carbolic acid 20 per cent. and sulphur 7 per cent. Needle-shaped crystals, insoluble in alcohol and water; with potassium, sodium, ammonium, mercury, zinc, lithium and lead it forms soluble salts which are odourless substitutes for iodoform.

Sodium Sozoidol—Sodium Di-iodophenol-sulphonate.—A combination of sozoidal and soda, in shining colourless crystals, soluble in glycerin (1 in 20), in water (1 in 14), changes to light brown on exposure to the air. Used as ointment 10 per cent. with lard, solution 2 per cent. in water. Dose—20 grs.

Actions and uses.—Intestinal antiseptic, astringent and anti-gonorrhœal; given internally in enlarged scrofulous or cervical glands and in diabetes. Externally a dusting powder it is used in nasal catarrh, wounds, ulcers; as an injection (1 to 50) in gonorrhœa, leucorrhœa, ozœna and laryngitis. 3 grs. blown into each nostril in whooping cough is very useful. It is also applied in tuberculous, scrofulous and syphilitic ulcers.

Spirone.—A mixture containing acetone 50, potassium iodide 2, glycerine 24, water to 100. As a local anæsthetic, soporific and rubefacient it is used in gout and rheumatism, and as a spray or inhalation used in spasmodic sneezing and asthma.

Stypticin—Cotarnine Hydrochloride.—Obtained from narcotine through the action of oxidizing agents. Yellow crystals or amorphous powder, soluble in water, yielding a straw-coloured solution which darkens on keeping. It is closely allied to hydrastine. Dose—¼ to ½ gr. Used as solution 10 per cent. for hypodermic injection and gauze or wadding.

Actions and uses.—Hæmostatic to check external and internal hæmorrhages, analgesic and sedative. It is equal or superior to hydrastis, ergot, &c. As a uterine specific it relieves pain and hæmorrhage, and is given in menorrhagia or hæmorrhage during pregnancy. In threatened abortion when pains are present, in sub-involution due to para or perimetritis, in climacteric disorders and hæmoptysis it is given with benefit. Wadding and gauze are used in parenchymatous hæmorrhage and in bleeding of dental extraction.

Styrocole—Guaiacol Cinnamas—Guaiacol Cinnamate—Cinnamyl Guaiacol. Obtained by the interaction of guaiacol and cinnamyl chloride. White needle-shaped crystals insoluble in water. As a demulcent used in urinary affections, as gonorrhœa, gleet, vesical catarrh, &c. Dose—2 to 10 grs.

Lithii Guaiacas—Guaiacate of Lithium—Lithium Guaiacate.—Digest guaiacum resin in lithia solution. Decant. Evaporate. It contains lithia 1, guaiacum resin 3. Given in chronic gout and rheumatism. Dose—3 to 5 grs.

Sublamin.—A chemical combination containing sulphate of mercury and ethylene diamine. As a non-irritant disinfectant it is used in skin affections. It has a great penetrative power owing to the presence of ethylene diamine. Does not coagulate albuminous substances of the skin like other metallic agents.

Sucrol—Dulcin—Para-phenetol carbamide.—An urea derivative of phenetidin. Treat paraphenetidin with carbonyl chloride and heat the resulting product with urea. Shining, white, needle-shaped crystals, 200 times sweeter than sugar, soluble in hot water (1 in 150) and cold water (1 in 800) and in alcohol (1 in 25), also in ether. It is used in diabetes. Dose—½ to 2 grs.

Sugarine—Zuckarine—Methyl-benzyl sulphimid.—Heat tolyl cyansulphamid with potash solution, add sulphuric acid when cool, and crystallize the precipitate from dimethyl-benzene. It is 500 times sweeter than cane sugar.

Sulph-aldehyde—Thialdehyde, containing sulphur in place of oxygen. Obtained by the action of sulphuretted hydrogen upon ethylic aldehyde. An oily liquid of a disagreeable odour, slightly soluble in water. Treated with an acid, solid polymers similar to paraldehyde are formed. As a hypnotic it is nearly 3 times as strong as paraldehyde. Dose—3 to 5 grs.

Sulphaminol—Thio-oxy-di-phenyl amine.—A compound containing sulphur, caustic soda and phenol; a pale yellow powder without any odour or taste; insoluble in water, soluble in alcohol, glacial acetic and alkalies. In contact with the fluids of the body it decomposes into sulphur and phenol. It is non-toxic and antiseptic, and a fine substitute for iodoform.

Sulpho-calcine—Contains pure oxide of calcium, flowers of sulphur, benzo-boracic acid, oleum eucalyptus, oleum gaultheria, and extractum pancreaticus. It is entirely non-poisonous, astringent, disinfectant and a powerful solvent. As a gargle or spray or as a swab with camel's hairbrush it is used with per-chloride of mercury in dissolving the membrane in diphtheria.

Sulphonal, B.P.—Di-methyl methane-di-ethyl-sulphone.—An oxidation product artificially prepared. Pass a stream of dry hydrochloric acid gas into a mixture of anhydrous ethyl hydrosulphide 2 (mercaptan), and anhydrous acetone 1, wash and oxidize the resulting mercaptol (dithio-ethyl-dimethyl methane) with potassium permanganate. White, colourless, prismatic crystals, without any odour or taste, soluble in cold water (1 to 450), in boiling water (1 to 15), in cold alcohol (1 in 50), in boiling alcohol (1 in 2), in ether (1 in 130), and in choloroform (1 in 3). It is unaffected by acids, alkalies or by oxidizing agents. Dose—10 to 30 grs., best administered in hot water. Used as powder or lozenges 8 grs. in each.

Comparative utility of sulphonal, paraldehyde and chloralamide—Chloral amide.—No bad after-effects: sleep produced in 15 to 20 minutes. Paraldehyde causes vomiting; sleep in 5 to 15 minutes. Sulphonal causes giddiness, feeling of depression; drowsiness and sleep within ½ to 2 hours.

Actions and uses.—Hypnotic, sedative and antispasmodic. In large and repeated doses it is cumulative and toxic. Under free purgation and free micturition, the grave symptoms generally disappear. In poisonous doses it gives rise to headache, vertigo, noises in the ear, and incapacity for both bodily and mental work; gastro-intestinal disturbance, as vomiting and diarrhœa;

nervous disturbances as ataxia, ptosis, feeble limbs and often albuminuria. In medicinal doses, like chloral it slows the respiration, but does not affect the heart; it leaves no bad after-effects, gives tranquil sleep without any narcotic action. It is used in nervous insomnia and especially that due to febrile affection, phthisis and Bright's disease; also in delirium tremens, intercostal neuralgia, epilepsy and mania. Being not readily soluble, it takes long to produce its effects. It is also used in diabetes. It is contra-indicated when there is tendency to vomiting or diarrhœa. It has no action in sleeplessness due to pain.

Tannal—Aluminii Tannico Tartras.—A double salt of aluminium with tannic acid and tartaric acid. A yellowish-white powder, soluble in water (1 in 2). Used as an astringent. Chiefly given in diarrhœa in children. Dose—1 to 2 grs.

Tannalbin.—A compound of tannin with albumen. A tasteless pale-brown powder containing 50 per cent. of tannin.

Actions and uses.—Intestinal disinfectant, only affected by the intestinal secretions. It has no action on the stomach. Given in diarrhœa. Dose—8 to 15 grs.

Tannigen—Di-acetyl-tannin—Acetic acid ester of tannin. Prepared by the action of glacial acetic acid on tannic acid. In this preparation two atoms of hydrogen of tannic acid are replaced by two atoms of acetyl. A light gray, slightly hygroscopic powder, without any odour and of a chalky astringent taste; soluble in alcohol, in dilute alkaline fluids and in alkaline phosphates and carbonates. Insoluble in cold water and in dilute acids. Dose—3 to 8 grs., in cachets.

Actions and uses.—An intestinal astringent given in acute and chronic diarrhœa, in enteritis in children, and in colic and dysentery. It passes unchanged through the stomach and is decomposed only on reaching alkaline secretion of the intestines. It has been tried with some success in cholera and appears in the urine as gallic acid.

Tannocal.—A whitish powder insoluble in gastric juice, but soluble in the intestinal secretions. As an intestinal astringent it is given in acute and chronic enteritis, especially in children. Dose—15 to 30 grs.

Tannoform—Tanninformaldehyde—A combination of tannin with formic aldehyde. A pale or reddish-white powder without any taste, soluble in alkaline liquids, insoluble in water. It contains tannin 50 per cent. Used as dusting powder or ointment. Dose—5 to 20 grs.

Actions and uses.—Local, unirritating, intestinal antiseptic and deodorant. The dusting powder with talc is rubbed in hyperidrosis and in night sweats of phthisis. It reduces excessive secretions as in ozœna, eczema, intertrigo, erythema, pruritis, piles and excoriations. Internally it is very useful in catarrh of the small intestines and of the rectum, in infantile cholera and in tuberculous diarrhœa.

Tannone—Tannapin, hexamethylene tetramine tannin. A condensation product of tannic acid and urotropin; contains 87 per cent. of tannin and 13 per cent. of urotropin. A light-brown, hygroscopic substance, insoluble in water, alcohol and ether, soluble in dilute alkalies. Dose—1 gr.

Actions and uses.—Intestinal astringent. In the intestines it splits up into tannin and urotropin. Tannin combines with albuminoids and forms albuminates which constringe the connective and muscular tissues and diminishes secretions, and urotropin acts as a disinfectant. Like tannigen it is given in acute intestinal catarrh in children, also in chronic enteritis, and as a disinfectant in diseases of the bladder.

Tenax.—A fine carded oakum prepared from wood and coal-tar; sed for surgical dressings. Used as an absorbent and antiseptic dressing for wounds.

Terebenum, B.P.—Terebene.—A mixture of dipentene and other hydrocarbons. Obtained by the action of sulphuric acid on oil of turpentine. A colourless liquid, of an agreeable odour of pine wood. Not miscible with water; it forms an emulsion with tragacanth and water. Used as capsules. A powerful antiseptic, disinfectant and deodorizer. The vapour is a sedative and antiseptic; used as an inhalation in phthisis, also in intestinal infection and in dysentery. Dose—5 to 15 ms.

Terpinum Hydratum—Terpene-Hydrate—Terpine—Hydrate of oil of turpentine. A derivative of oil of turpentine. In prismatic crystals resembling those of chloral hydrate; soluble in water (1 in 200), in alcohol (1 in 10), in oils (1 in 6). Dose—2 to 6 grs. Used in pills, cachets, &c.

Actions and uses.—Pulmonary sedative, diuretic and hæmostatic Given in bronchitis it assists expectoration; also given in catarrhal affections. As an hæmostatic it checks bleeding from lungs. In whooping cough large doses check the attacks.

Terpinol—Obtained by the action of dilute sulphuric acid on terpene. An agreeable aromatic liquid. Given in catarrhal affections.

Tetronal.—Di-ethyl-methane-di-ethyl sulphone.—Colourless, odourless, shining scaly crystals, soluble in alcohol (1 in 15), in ether and hot water, and in cold water (1 in 450). Used as hypnotic without any secondary bad effects. Its action is similar to that of sulphonal, but doubly powerful and similar to trional. It produces gastric disturbance and vomiting; not so with trional. In small doses it prevents the night sweats of phthisis. Should be avoided in cases of insomnia accompanied by pain.

Thallinæ sulphas—Thalline sulphate—Thalline—Tetra hydropara-chin anisol sulphate. Tetra-hydro-para-methyl-oxy-chinoline. A sulphate of a synthetically prepared base from chinoline. To obtain it, heat together a mixture of para amido anisol, para nitro anisol glycerin, and sulphuric acid. Yellowish-white granular crystals. It has anise-like odour and aromatic bitter taste; soluble in alcohol (1 in 100); in water (1 in 7); sparingly so in ether and chloroform. Darkens by exposure to light. Used as injection (1 in 60) or 1 to 2 per cent. Bougies 5 per cent. with gelatine. Antrophores or spring bougies 5 per cent. Dose—3 to 5 grs.

Actions and uses.—Antiseptic. Like kairin it destroys or lessens hæmoglobin of the blood; as an antiseptic injection or as bougies it is used in gonorrhœa.

Thalline Periodidum—Thalline Per-iodosulphate—Per-iodo-tetra hydropara-methyl oxy-chinoline. Bluish granular powder. Insoluble in water. Used as an antiseptic mixed with pilocarpine or musk in the treatment of cancer of the uterus or rectum. Dose—2 to 5 grs.

Thermodin—Acetyl-para ethoxy phenyl urethane. Allied to neurodin. Colourless crystals without any odour, slightly soluble in water. Antipyretic and analgesic. The temperature falls within one hour. Given in typhoid fever, pneumonia, influenza and tuberculosis. Dose—as antipyretic, 5 to 10 grs.; as analgesic, 15 to 20 grs.

Thiallon—A salt of lithia in combination with a laxative salt. It is a granular salt, non-hygroscopic, of a white colour and a faint acid reaction. Readily diffusible. The taste is slightly bitter. Sparingly soluble in cold water and freely so in hot

water. As a sialagogue and nervine tonic it stimulates the mucous membrane of the stomach. It neutralizes the acid gastric juice and increases its secretion. It also stimulates the liver and increases the flow of bile; hence of great value in hepatic congestion. As a solvent of cholesterine and bile salts its use has been recommended in gallstones and as a prophylactic to stop the formation of biliary calculi. It stimulates the intestinal mucous membrane, increases its secretions, and as a hydrogogue it produces free catharsis. As a stimulant of the genito-urinary tract it acts on the kidneys as a powerful diuretic. It stimulates the renal excretory functions and by its hydragogue properties it renders the urine alkaline and non-irritating, and thus relieves the irritation and inflammation of the genito-urinary tract. As a solvent in uric acid diathesis it combines with uric acid in the urine and forms a soluble salt of urate of lithium; hence useful in softening and disintegrating uric acid calculi when present. It dissolves oxalate of calcium crystals. Chiefly recommended in rheumatism, gout and the uric acid diathesis. As a hepatic stimulant when administered along with quinine it intensifies the action of quinine.

Thiocamp.—A patent liquid preparation, formed by the action of sulphur dioxide or sulphurous acid gas in excess on camphor. A watery fluid contains 60 times its volume of sulphurous acid gas. It is soluble in alcohol; on exposure to air it evolves sulphurous acid gas. One ounce to a point of water forms a disinfectant for drains.

Thiocol—Potassium guaiacol sulphonate.—It is non-toxic. It contains 60 per cent. of guaiacol. Occurs in white crystals. Taste bitter, absolutely inodourous, readily soluble in water. Dose—1 to 2 grs.

Actions and uses.—Non-irritant stimulant of the mucous membrane. A useful substitute for pure guaiacol, valuable in night sweats of phthisis, in cystitis and in inflammation of the respiratory tract, and given in tuberculosis, chronic bronchitis and intestinal catarrh.

Thioform—Basic-dithio-salicylate of bismuth.—A yellowish-grey powder, without any odour. Insoluble in the usual solvents. Contains 75 per cent. of oxide of bismuth. Used as an antiseptic dusting powder in diseases of the ear, nose and throat and in dentistry and ophthalmic practice.

Thiol or German Ichthyol.—An artificial ichthyol, prepared from gas oil and sulphur. Exists as thiolum siccum and thiolum liquidatum. The dry form occurs in black scales or powder of bituminous odour and astringent taste; soluble in water, chloroform, insoluble in ether and benzin, sparingly soluble in alcohol. The liquid form is syrupy and contains 40 per cent. of the dry powder. It is soluble in water, alcohol and ether from which it is precipitated by acids. Dose—Dry thyol 2 to 6 grs., of the liquid 5 to 10 ms. Used internally as pills. Ointment of liquid thyol (1 in 8) of lard. Dusting powder—Dry thyol 1, starch 1, oxide of lime and talc 16. Collodion, solution, soap and plaster.

Actions and uses.—Local stimulant and soothing emollient. It causes no pain, burning or irritation. The dusting powder is used for acne, eczema, intertrigo, erysipelas, pemphigus, burns, contusions, and ulceration of the cervix. Internally it is given in neuralgia, catarrh and rheumatism. It promotes rapid absorption of effusions as in pelvic exudation and endometritis.

Thiophene Di-iodidi—Di-iodo-thiophene.—A compound closely allied to pyrrol. Obtained by the action of iodine on thiophene in the presence of mercuric oxide. A colourless oily liquid or volatile crystals. Insoluble in water,

soluble in hot alcohol, ether and chloroform; contains 75 per cent. of iodine and 9 per cent. sulphur. As an antiseptic it is a good substitute for iodoform.

Thioresorcin.—Treat resorcin with sulphur in the presence of an alkaline solution. A yellowish-grey amorphous or semi-crystalline powder, without any odour; insoluble in water, slightly soluble in ether and alcohol. Used as a dusting powder or ointment 20 per cent. Non-toxic. It is a good substitute for iodoform. Used locally in the form of an ointment with lanolin or paraffin. Di-iodothioresorcin.—A brown powder; insoluble in water, soluble in alcohol. Used like thioresorcin.

Thiosinamin—Rhodallin—Allyl sulpho-carbamide—Allyl-thio-urea.—Obtained by the interaction of ammonia and volatile oil of mustard (sulphocyanide of allyl). Colourless crystals of a faint garlic odour and of a bitter taste. Soluble in alcohol, ether, and water. Dose—1 to 5 grs. Used as solution 15 per cent. in glycerin hypodermically.

Actions and uses.—Emollient, discutient and antiseptic, equivalent to potassium iodide. Used hypodermically for leucoderma, lupus, uterine tumours, enlarged tumours or glands, hypertrophic scars, cicatricial keloids, &c. It also softens scabs. In deafness due to catarrh of the middle ear it is very useful.

Thymacetin.—Derived from thymol in the same way that phenacetin is derived from phenol. A white crystalline powder, used like phenacetin in neuralgia, headache, &c. Dose—5 to 10 grs.

Thymoform.—A condensation product of thymol and formaldehyde. A fine powder, of yellow colour, without taste and of a faint odour. It dissolves readily in ether, chloroform and olive oil; insoluble in water. A good substitute for iodoform and dermatol.

Tolypyrin — Para-tolyl-dimethyl-pyrazolone—A compound of antipyrin, in which one atom of hydrogen of the phenyl group is replaced by one atom of methyl. Colourless crystals of a bitter taste. Soluble in water (1 in 10), freely soluble in alcohol, insoluble in ether. As an antipyretic, antirheumatic and antineuralgic it is given in fevers, rheumatism and neuralgia. As an analgesic it relieves hemicrania. Dose—5 to 20 grs.

Tolysal—Tolypyrin-salicylate — Para-tolyl-dimethyl-pyrazolone salicylate.—A compound of tolypyrin and salicylic acid. Small colourless crystals, sparingly soluble in water, insoluble in ether, readily soluble in alcohol and acetic ether. Antineuralgic and antipyretic. Similar in properties to tolypyrin. No subsequent bad effects. Given in articular rheumatism, neuralgia, &c. Dose - 5 to 20 grs.

Trichlorphenol—Trichlorphenic acid—Acidum trichlorphenicum.—A derivative of phenol, prepared by the action of carbolic acid on chlorinated lime. White volatile crystals, of a tarry odour and pungent taste; insoluble in water, soluble in alcohol, glycerin ether, fixed and volatile oils. As a disinfectant 25 times stronger than carbolic acid.

Chlorphenol.—A mixture of a monochlorphenol with euginol, menthol and alcohol. Used as inhalation in phthisis.

Trikesol.—A German speciality. A purified mixture of the three cresols. A clear colourless oily liquid, soluble in water (1 in 40). Used as a solution (1 to 2 per cent.). As a germicide thrice as powerful as carbolic acid.

Trimethylamina—Trimethylamine—Secalin.—It is isomeric with propylamine; prepared by the action of lime or caustic alkali on herring brine or stale fish. Formerly it was prepared by the action of caustic alkali on ergot and hence

the name secalin. Trimethylamine may also be obtained from arnica flowers and also from hops, codeine, codliver oil, decomposing albuminous substances as urine, herring-pickle, and the residue in the preparation of sugar from beet root. It contains 10 to 20 per cent. of ammonia, hence known as a solution of compound ammonia. It is a colourless, inflammable gas of the fishy ammoniacal odour of herring brine. Insoluble in water. Used as solution or liniment 1 to 3 of glycerin.

Actions and uses.—A powerful escharotic and irritant of the alimentary canal. It depresses the heart, lowers the arterial tension, lessens blood heat and diminishes the excretion of urea. It is given as a sedative in acute rheumatism, both internally and externally, to relieve pain. As an anodyne the liniment is used in chorea to moderate the movements. Dose—20 to 40 ms. of 20 per cent. solution.

Trimethylaminæ Hydrochloridum.—Neutralize the solution of trimethylamine with hydrochloric acid and crystallize. Deliquescent staple salt in prisms or crystals, having a pungent fishy odour and pungent saline taste; soluble in water and alcohol. More agreeable for use than trimethylamine. Used as solution, pill, liniment or as syrup. A cardiac and muscular sedative it promotes nutrition, frees expectoration, stimulates the action of the spinal cord. As an antirheumatic and powerful antipyretic it is used in acute rheumatism and gout to relieve pain and diminish fever. Dose—2 to 3 grs.

Trional—Ethyl-urethane—Di-ethyl-sulphon-methyl ethylmethane.—Similar to sulphonal, but with an ethyl group substituted in place of one of the methyl groups. Occurs in colourless, glistening crystals or plates, without odour and having a distinctly bitter taste. Soluble in water (1 to 320), soluble in alcohol, ether and hot water. Dose—10 to 30 grs.

Actions and uses.—Hypnotic and sedative; very efficient and prompt in action, having no secondary ill-effects. Given in cerebral excitement, in restlessness with delirium, and in insomnia which so frequently accompany pulmonary phthisis. It has a specific inhibitory effect on night sweats. As a hypnotic it is superior to sulphonal and tetronal. It has little or no ill-effect on the heart. In simple dyspnœa it is highly effective. Its effects increase when given with heroin in $\frac{1}{12}$ of a grain doses. When pain is also present, it may be given with phenacetin or antifebrin.

Triphenin—Propionyl-phenetidin.—Prepared from amido-phenole or para-phenitidine. Colourless crystals, soluble in water (1 in 2,000).

Actions and uses.—Antipyretic, antineuralgic and sedative; similar to phenacetin. Free from secondary effects of antifebrin, kairin, analgene and antipyrin. Given in fever where it is certain in its action; defervescence is gradual and rise of temperature slow in acute rheumatism. As an antineuralgic it is given in migraine. As a sedative it is of benefit in tabes mesenterica. Dose—As antipyretic 4 to 10 grs., as antineuralgic 15 grs.

Tropa Cocaine—Benzoyl-Pseudo-tropeine—Tropaine.—Obtained from Java coca leaves. Colourless crystals, soluble in water. Dose—$\frac{1}{4}$ to $\frac{1}{2}$ gr. Tropacocainæ Hydrochlorum—Hydrochloride of Tropacocaine.—Used as solution 3 per cent.

Actions and uses.—Powerful anæsthetic, not half as toxic as cocaine. The solution of hydrochloride is used in ophthalmic operations and in extraction of teeth. It produces local anæsthesia of the cornea more rapidly than cocaine, but the effect is very transitory. It causes less diltation of the pupil.

Tropone.—An albuminous substance, obtained from animal or vegetable proteids. A lightbrown powder resembling sand, insoluble in water, taste pleasant. It contains 90 per cent. of albumen. Like milk, it is peptonized by hydrochloric acid and pepsine, and used as biscuits and bread. An easily digestible food.

Tumenol.—A sulphonized product, obtained from mineral oil; similar to thiol. To obtain it treat hydrocarbons of mineral oils with sulphuric acid, and tumenol is deposited as a black, thick, viscid substance, soluble in water. It has a powerful reducing property. It is used as a dusting powder in eczema or as an ointment in pruritis, moist eczema, erosions, excoriations, ulcers, &c.

Tussol—Antipyrin amygdalate.—In white granular crystals; soluble in water and alcohol, and of saline taste. As analgesic and antipyretic it is given in whooping cough. Dose—5 to 15 grs.

Ulexine.—An alkaloid, obtained from ulex europœus or common furze. In white yellow crystals, soluble in water. Forms a hydrobromide. Used as a powerful diuretic. It is antidotal to strychnine. Dose—$\frac{1}{10}$ to $\frac{1}{4}$ gr.

Unatrol—Sodium oleate.—A white powder, freely soluble in water. Used as a hepatic stimulant, in torpor of the liver and to increase the secretion of bile. A nice excretor of gall-stone. Dose—10 grs.

Uralium—Ural—Chloral-urethane—Uraline.—Mix together chloral and urethane, and add hydrochloric acid. Colourless, shining, lamellar crystals, soluble in alcohol (1 in 6) and sparingly so in water. Used as a hypnotic in insomnia, cough, angina, &c. It is, however, uncertain in its effects, disagreeable to take, causes nausea and disorders of digestion. Dose—10 to 30 grs.

Uranii Nitras, B.P.—Uranium Nitrate.—The nitrate of a metal occurring in pitchblende and other minerals. Efflorescent, fine, yellow crystals. Taste astringent and styptic, freely soluble in water (2 in 1). Dose—$\frac{1}{2}$ to 5 grs. Used as solution (10 grs. to 1 oz.).

Preparations.—Uranii et quininæ chloridum. Uranium and quinine chloride; occurs in yellow crystals soluble in water (1 in 100). Given in diabetes, also as a spray in throat affections. Dose—3 to 6 grs.

Urea Quininæ—Quininæ hydrochloro-carbamidum.—In small colourless prisms. Soluble in water (1 to 1). Dose—5 to 15 grs. Used hypodermically in cholera to promote the secretion of the urine.

Urethane—Ethyl urethane—Ethyl carbamate.—Heat together urea nitrate and ethyl alcohol. Colourless prismatic crystals without odour and of a saline taste like that of saltpetre. Soluble in alcohol (1 to 6), oil (1 to 20), chloroform (1 to 15), ether (1 to 1), water (1 to 1), and glycerin (1 to 3). An excellent solvent for hydrochloride of quinine, hence a great aid in preparing solution of quinine for subcutaneous use. Urethrane 24 grs., quinine hydrochloride 48 grs., and water 48 ms.; 16 ms. contain 7 grs. of quinine. Being non-irritant, it is used subcutaneously. Dose—As a sedative 15 to 40 grs., as a hypnotic 30 to 40 grs.

Actions and uses.—As a hypnotic not so reliable as chloral. It is a cerebral cardiac and respiratory sedative. Given in delirium tremens, insomnia, nervous excitement, tetanus and acute mania. It is an antidote to strychnia, picrotoxin and resorcin poisoning. As an enema it may be given in convulsions.

Uricedin.—A German speciality. Brown yellow granules, soluble in water. Dose—1 to 2 drs. Treat lime juice with sulphuric and hydrochloric acids, neutralize with soda. Then add lithium citrate and evaporate to dryness. As a lithontriptic, given in gout, gravel, urinary calculi uric acid diatheses, rheumatism, &c.

Uropherin—Lithium-deuretin.—It is a compound of lithium salicylate with theobromine lithium. It contains lithium 50 per cent. A white amorphous powder, decomposing on exposure to the air. It is without any odour and of an alkaline taste; soluble in water (1 in 5). As a diuretic it is given in cardiac and renal dropsy, combined with digitalin. Dose—5 to 60 grs.

Urosine—Eurosine—Quinate of Lithia.—A combination of quinic acid with lithia citras by a patented process. Used in tablets each 7½ grains or as a powder to prevent the formation of uric acid. Hence given against gout, uric acid diatheses, &c. It is also a specific against malaria. Like salicylic acid, it is given against rheumatism.

Ursal.—A compound of salicylic acid and urea. As a diuretic given in gout and rheumatism. Properties similar to those of sodium salicylate.

Vasogen—Valsol—Vasolum.—An oxidised hydrocarbon, an oxygenated petroleum. It is rapidly absorbed by the skin. An aseptic liquid, soluble in water. A vehicle for forming iodoform vasogen (3 per cent.) used for injection in tubercular abscesses and anal fissures. Creosote vasogen 20 per cent.; mercury vasogen ointment 50 per cent.; ichthyol vasogen 10 per cent.; guaiacol vasogen 20 per cent.; sulphur vasogen 3 per cent.; tar vasogen 25 per cent. Other liquid vasogens contain camphor, chloroform, iodine, menthol, potassium iodide, &c. Iodine vasogen is used in epididymitis, for inguinal swellings, syphilitic skin diseases, tuberculosis, &c.

Xylol—Xylene—De-methyl benzine.—A coal tar derivative; colourless, yellowish liquid, odour very faint; used as capsules, spray or lotion. As an antiseptic given internally in small-pox to relieve eruptions in the throat and to lessen fœtid exhalations. Also applied externally as a spray or lotion. Dose—10 to 15 ms. dissolved in oil.

Xeroform—Bismuthi tribrom-phenol—Tribrom-carbolate of bismuth.—A mixture of tribromo-phenol and bismuth oxide in equal proportions. Neutral yellow or greenish-yellow powder, of a faint odour and taste. Insoluble in any media. Dose—5 to 20 grs.

Actions and uses.—Non-toxic, non-irritating and non-caustic. A good substitute for iodoform. As an astringent and bactericide it is given internally in diarrhœa, cholera, &c. It does not affect the mucous membrane of the digestive organs. Externally it is dessicating; it diminishes suppuration, and loosens secretion. Like iodoform, it is dusted in wounds, buboes, and used as a snuff in coryza. It also promotes granulation and cicatrization very quickly.

POISONS.

Acetanilid, Antipyrin, Kairin and Phenacetin. Antagonists—*Belladonna* or *atropine*, to maintain the blood pressure; *strychnine*, to maintain respiration; *oxygen* inhalation to overcome cyanosis. *Heat*, locally; *stimulants*, to support vitality, such as coffee, camphor and ether hypodermically injected.

Mineral Acids. Antagonists—Opium, ammonia (intravenous injection); stimulant; alcohol to combat depression. Antidotes—Alkalies, chalk, whiting, wall plaster, magnesia, sodium carbonate, albumen, white of eggs, milk, starch and mucilage; to protect the mucous membrane, oils, soap, &c.

Acetic Acid. Antagonists—Morphine ¼ gr. to remove shock. Antidotes—Soap and water, milk, oil, gruel, magnesia or magnesium carbonate, lime, chalk, and white-wash.

Carbolic Acid. Antagonists—Wash out the stomach; atropine hypodermically (to maintain heart and respiration) until eliminated; amyl nitrite inhalation; alcohol, brandy as stimulant; friction and heat to the extremities, and faradization. Antidotes—Magnesium sulphate 1 oz., or sodium sulphate ½ oz., to form a soluble sulpho-carbolate; alcohol and water 2 ozs. each to prevent corrosive effects; castor oil; vegetable demulcents to protect the mucous membrane; soap suds; lime water; liquor calcis saccharatus; cider vinegar; also sodium carbonate; oils should not be used, as they increase absorption of the poison.

Carbonic Acid (Carbon Dioxide). Antagonists—Alcohol by mouth or rectum, stimulants, cold douche, blows upon the chest, *artificial respiration*, coffee (enemata). Antidotes—Chlorine water inhalation or spray; oxygen-gas inhalation; ammonia vapour inhalation; galvanism, free open air.

Hydrocyanic Acid (Prussic acid)—Potassium cyanide—bitter almonds, cherry laurel. Antagonists—Stimulants: brandy, ether, ammonia, &c. Douche or hot and cold effusion to the spine alternately, artificial respiration, faradization to the heart, mustard to the spine, ether, ammonia by the stomach, by injection hypodermically, by inhalation, or by intravenous injection. Antidotes—If time permits to do anything, cobaltous nitrate, ammonia water inhalation, chlorine water by spray or vapour. Iron per and proto salts with magnesia. Sodium or calcium chloride, ½ dr. in water; sodium thiosulphate. Emetics, stomach pump, apomorphine hypodermically.

Oxalic Acid and oxalates (salts of sorrel or of lemon). Antagonists—Calcium carbonate, calcium hydrate, mucilaginous drinks; poultices to the abdomen, morphine; hypodermically stimulants, and warmth to the extremities.

Arsenious acid—Fowler's solution—white arsenic—arsenical wall paper—Paris green (cupro-aceto arsenite). Antidotes—Castor oil, dialysed iron, hydrated peroxide of iron; sal volatile repeatedly, demulcents, apomorphine hypodermically, perchloride of iron and magnesia, green sulphate of iron, hydrated ferri subcarbonas, charcoal: demulcents; emesis by feather tickling; poultices, linseed meal; potassium iodide to promote elimination.

Aconite. Antagonists—Evacuation of the stomach; atropine, ammonia, morphine, amyl nitrite and ether (to maintain heart and respiration), warmth to the heart and extremities; artificial respiration, recumbent posture, stimulants, digitalis to counteract its cardiac action, caffeine hypodermically or by the mouth. Antidotes—Tannic acid, animal charcoal, emetics, stomach pump, purgatives, poultices to the abdomen.

Alcoholic Intoxication. Antagonists—Ammonia inhalation ; cold effusion to the head ; warmth to the extremities ; faradization ; artificial respiration ; chloral (grs. 20) and bromides (grs. 20) to procure sleep ; capsicum (grs. 20) and ammonium chloride (grs. 30) against stupor and to restore faculties ; hyoscine dose—gr. $\frac{1}{100}$, or duboisine gr. $\frac{1}{100}$, as a hypnotic, used hypodermically for delirium tremens. Belladonna if there is insomnia, cyanosis, cerebral congestion ; stramonium hypodermically or by the rectum ; tartar emetic in sthenic cases ; ammonium bromide if horror exists ; cannabis to procure sleep. Antidotes—Emetics, stomach pump, apomorphine hypodermically.

Alkalies. Antagonists—Opium to check shock and restore vitality : stimulants, caffeine, alcohol, &c. Antidotes—Dilute vegetable acids, vinegar, lime juice, albumen, milk, gelatin, oils. To protect mucous surfaces, demulcents ; animal charcoal and potassium permanganate.

Alkaloids—Atropine, conine, physostigmine, jelsemine, hyoscyamine, pilocarpine, staphisagrine, &c. Antidotes—Emetics, warm water, vegetable astringents, tannin tea, coffee, albumen, charcoal and iodine. Stimulant : heat, friction to the extremities. Artificial respiration, emetic and cathartics afterwards.

Ammonia. Antagonists—Aconite, veratrum, digitalis and other cardiac sedatives. Antidotes—Vinegar, lemon juice, vegetable acids followed by demulcents ; inhalation of chlorine water or acetic acid, and hydrochloric acid vapours.

Amyl Nitris. Antagonists—Brucine, digitalis, strychnine, picrotoxin, ergotine (hypodermically). Stimulants ; artificial respiration, alternate hot and cold douche, and cold to the head.

Anæsthetics : if chloroform by the mouth. Evacuate the stomach. Other treatment the same as for irritant poisoning. Chloroform or ether inhalation. Antagonists—Amyl nitrite, oxygen by inhalation, venesection to relieve engorged right heart ; atropine hypodermically, strychnine hypodermically ; ammonia intravenously or internally. Brandy internally ; cold effusion, flagellation, galvanism to stimulate the heart's action ; tongue held forward by forceps ; artificial respiration, fresh air. Heat to the extremities and body ; invert the patient ; compress and relax the chest alternately.

Antimony—Tartar emetic or antimony chloride (butter of antimony). Antagonists—Opium, alcohol, ether and other antispasmodics. Antidotes—Wash out the stomach. Mustard, tannin, gallic acid, sal volatile, strychnine, digitalis (if collapse), morphine hypodermically ; demulcents as milk, white of egg, infusion of strong tea or coffee, linseed tea, flax seed tea, magnesia, alkalies and salts of lead ; tickling the fauces.

Atropine and Belladonna—Hyoscyamus, Dhatura. Antagonists—Morphine, aconite, physostigmine, pilocarpine gr. ⅙ hypodermically ; quinine, muscarine, coffee, brandy, capsicum, faradization of the respiratory muscles, flagellation, cold to the head, amyl nitrite, eserine, oil of sassafras, pepper, chloral, ammonia inhalation. Antidotes—Tannin, charcoal 4 drs. Emetics—zinc sulphate, apomorphine ; cathartics, stomach pump, poultices to abdomen, artificial respiration.

Bromides. Antagonists—Digitalis, ergot, belladonna, cocaine, alcohol and opium, and vasomotor stimulants. Demulcents to protect the mucous membranes.

Calcium Chloride. Antagonists—Opium, alcohol to relieve depression. Antidotes—White of eggs, oils, milk and mucilage.

Camphor. Antagonists—Aconite, coffee, cold, alcohol, opium, bromides to relieve convulsions. Antidotes—Water to precipitate it from alcoholic solution, alkalies, earthy salts, emetics.

Cannabis. Antagonists—Alcohol, keep awake and moving, strychnine as a respiratory stimulant; lime juice, ammonia, faradization to the respiratory muscles to keep awake. Antidotes—Emetics.

Cantharis. Antagonists—Opium if gastro-enteritis. Antidotes—Emetics, demulcents freely (linseed tea, gruel, barley water), water, oleaginous injections into the bladder to allay irritation.

Chlorine gas or vapour. Antagonists—Chloroform inhalation to lessen irritation in the throat. Antidotes—Albumen, ammonia vapour inhaled and ammonium sulphide inhalation. Fresh air, steam inhalation. Emesis with warm water, white of egg, milk, lime water, magnesia.

Chloral Hydrate—Syrup of chloral. Antidotes—Liquor potassæ, emetics, stomach pump. Antagonists—Strychnine sub-cutaneously, artificial respiration, fresh air, oxygen inhalation, amyl nitrite inhalation, caffeine, stimulants as alcohol, ammonia, frictions, electricity, mustard plasters, picrotoxin $\frac{1}{10}$ of a grain hypodermically, atropine $\frac{1}{74}$ of a grain hypodermically to avoid cardiac respiratory and spinal depression, belladonna tincture, cold to the head, heat to the body and limbs.

Cocaine. Antagonists—Amyl nitrite, ammonia inhalations to remove cardiac depression; opium, alcohol as stimulant; morphine and ether hypodermically; ammonia inhalation and artificial respiration; caffeine internally; chloral, ether and chloroform most direct antagonists. Antidotes—Tannin, potassium permanganate, albumen, emetic, cathartics, charcoal.

Conium. Antidotes—Caustic alkalies, tannic acid, gallic acid followed by emetics, cathartics. Antagonists—Picrotoxin, nux vomica, strychnine, alcohol, friction and other tetanizers.

Copper Salts. Antagonists.—Evacuate the stomach; opium, demulcents for gastro-enteritis. Potassium iodide, alkalies and their carbonates. Antidotes—Potassium ferrocyanide, albumen, magnesia.

Coarse glass powder. Antagonists—Antidotes—Crumbs of bread followed by an emetic.

Curare. Antagonists—Artificial respiration, strychnine to support the heart and respiration, atropine, artificial respiration. Antidotes—Ligature above the wound. Incise freely the wound, suck the wound strongly; caustic alkalies to destroy the poison; evacuate the bladder to prevent re-absorption.

Cyanide of Potassium. Antagonists—Ammonia, alcohol, digitalis, strychnine, artificial respiration, friction and galvanism. Antidotes—Ferrous sulphate followed by emetics or stomach pump, cobaltous nitrate and sodium thiosulphate.

Corrosive Sublimate and Gold Salts. Antagonists—Bismuth, tannin, diluted nitric acid, sodium sulphide as mouth-wash or gargle; belladonna to lessen salivation, hyoscyamine for the tremor, morphine for shock. Antidotes—Milk, gluten, magnesia, vegetable astringents. Hydrated proto-sulphide of iron, charcoal, lime water. Albumen to be followed by evacuation of the stomach, by emetics or stomach pumps and by potassium iodide.

Croton Oil—Savin Oil—Tansy Oil, &c. Antidotes—Emetic like zinc sulphate; mucilage; demulcents; opium for diarrhœa, camphor and stimulants if collapse, warm bath.

Datura. Antagonists—Emetics, tannin, pilocarpine, physostigmine and morphine.

Digitalis—Digitalin, Digitoxin. Antagonists—Morphine ½ gr. hypodermically, aconitine $\frac{1}{100}$ gr. hypodermically against the cardiac action; sal volatile internally, rest in the recumbent posture. Saponin and senegin, alcohol as cardiac stimulant, galvanism. Antidotes—Emetics, apomorphine hypodermically, hot coffee, hot tea, tannic acid.

Ergot. Antagonists—Amyl nitrite, aconite, veratrum viride, tobacco and lobelia. Antidotes—Tannin followed by an emetic.

Fish Poison—Shell-fish. Antagonists—Capsicum, chloroform, potassium chlorate, opium, liquor ammoniæ acetatis. Antidotes—Emetics and cathartics.

Fungi Poisons or Mushrooms, Muscarine. Antagonists—Atropine hypodermically, digitalis. Stimulants—Coffee, warmth to the abdomen, stramonium, belladonna. Antidotes—Tannic acid, emetic of zinc sulphate, &c., purgative—castor oil.

Gelsemium. Antagonists—Morphine, digitalis, atropine, ammonia, alcohol, tincture of xanthoxylum, heat externally, faradization, artificial respiration, brandy, capsicum internally. Antidotes—Tannin followed by an emetic or the stomach pump.

Insect venom, insect stings, reptile bites.—Ipecac poultices or paste to allay pain. Antidotes—Ammonia water, carbolic acid, sodium carbonate, sodium chloride locally to the wound; hypodermic injection of ammonia water 2 per cent. Dose—15 ms. Ammonia neutralizes the formic acid. Salicylic acid with collodion (1 in 19) locally; sugar locally.

Irrespirable Gases—Carbon dioxide gas and carbon monoxide, sulphuretted hydrogen, coal gas, nitrous oxide. Antagonists—Oxygenation of blood as fresh air, liquor ammoniæ inhalation, hot and cold douche to the chest alternately to awaken respiration, artificial respiration. Oxygen inhalation, atropine hypodermically, galvanism, friction to the extremities, ether sub-cutaneously, strychnine hypodermically, stimulant to the peripheral circulation, blows upon the chest if heart's action becomes slow and imperceptible, traction of the tongue, enema of coffee. Antidote—Chlorine water as spray or inhalation.

Iodine. Antagonists—Restoratives, vasomotor tonics as quinine, digitalis and amyl nitrite, morphine to relieve pain, pyrethrum root to chew to hasten elimination. Antidotes—Starch, arrowroot, to be followed by stomach pump, white of egg, demulcents, lime water, sodium and potassium carbonates.

Iodoform. Antidotes—Bicarbonate of sodium, bromide of potassium.

Lead Salts—Acetate of Lead. Antagonists—Opium to allay irritation, belladonna to relieve tenesmus, strychnine for paralysis; electricity, alum and milk for colic. Antidotes—Albumen, milk, emetics or stomach pump, sulphate of sodium and magnesium, flax tea, sodium phosphate, elm tea, acid carbonates, diluted milk, white of eggs, diluted sulphuric acid, ferrous sulphate. In chronic poisoning, potassium iodide 10 grs., atropine $\frac{1}{100}$ gr. Potassa sulphurata for baths. In cachexia, quinine, sulphate of iron and dilute sulphuric acid.

Lobelia. Antagonists—Alcohol, digitalis, belladonna, ergot as vasomotor excitants: strychnine, picrotoxin, thebaine to act on the nervous system. Antidotes—Tannin to form insoluble tannates, charcoal, muscarine.

Metallic Salts. Antagonists—Opium, alcohol, cocaine; stimulants for shock. Antidotes—Albumen, milk, magnesia, alkalies, starch, soap, oils, demulcents—Emetics, cathartics, stomach to be washed.

Nitro-Benzol. Antagonists—Alcohol, liquor ammoniæ, chloric ether, atropine internally, by enema or hypodermically; artificial respiration and galvanism. Antidotes—Emetics and ammonia inhalation.

Nux Vomica and Strychnine. Antagonists—Rest and quiet—chloral hydrate, butyl chloral hydrate, potassium bromide, chloroform or ether inhalation, physostigmine, picrotoxin, chamomile oil, amyl nitrite inhalation, veratrum viride, urethane, methyl and ethyl derivatives of strychnine, brucine and thebaine, camphor monobromate, ice to spine, tobacco by enema, apomorphine hypodermically, nicotine, artificial respiration, paraldehyde, hot bath, potassium permanganate in large doses, tannin, iodine solution, charcoal. Antidotes—Lard, fats and oils to retard absorption, eucalyptus decoction. As a wash for the stomach emetics, or stomach pump; evacuate the bladder to prevent absorption.

Opium and Morphine. Antagonists—Atropine gr. $\frac{1}{75}$ hypodermically to act on the brain, heart, respiration and arterial tension; caffeine by the mouth, or rectum, or hypodermically; cocaine against cardiac and respiratory depression, strychnine alone or with atropine against respiratory paralysis. Amyl nitrite inhalation or ammonia intravenous injection, capsicum for rectal injection, to relieve stupor; vinegar, lime juice, douche alternately hot and cold to the neck, artificial respiration, oxygen inhalation, venesection in distension of the right heart and failure of respiration, potassium bromide to remove cerebral symptoms; stomach to be washed, faradization of the chest, bladder to be evacuated, flagellation. Antidotes—Tannin, vegetable astringents to be followed by an emetic or stomach pump; apomorphine sub-cutaneously, potassium permanganate, tincture of iodine, charcoal.

Phosphorus (Rat Paste). Antagonist—Opium; to relieve cardiac and general depression. Copper sulphate to form insoluble phosphide of copper. Antidotes—Powdered charcoal to prevent the action of the poison on the tissues. Potassium permanganate, turpentine, hydrated magnesia, Epsom salt as a purgative, mucilaginous drinks, copper carbonate with sugar, morphine, lime water. Avoid fats and oils as they dissolve phosphorus and promote absorption, and milk as it dissolves the poison. Turpentine, should be old (containing oxygen).

Physostigma (Calabar bean), Eserine. Antagonists—Atropine gr. $\frac{1}{60}$ hypodermically for its effects on respiration, heart and pupils; chloral hydrate, nux vomica by mouth or rectum; artificial respiration; stimulants freely. Antidotes—Emetics, stomach pump, tannic acid, apomorphine hypodermically; vegetable astringents, caustic alkalies.

Picrotoxin (Cocculus Indicus). Antagonists—chloral hydrate, potassium bromide, anæsthetics to relieve spasms. Antidotes—Emetics, acetic acid, stomach pump.

Pilocarpine (Jaborandi). Antagonists—Atropine gr. $\frac{1}{100}$ hypodermically, Morphine to control nausea and vomiting. If collapse, ammonia, black coffee, wine. Antidotes—Emetics, tannin, per salts of iron, caustic alkalies and metallic salts.

Rhus (Poison Oak or Ivy). Antagonists—Cocaine 4 to 8 per cent. solution alone or with oleate locally, to relieve itching and burning, grindelia robusta lotion, carbolic acid solution; lobelia infusion, solution of corrosive sublimate, acetate of lead, chlorinated soda, lime water with linseed oil, soap suds. Aristol as dusting powder, hydrogen dioxide as a wash for face and hands, sassafras infusion internally and locally, sodium sulphite with glycerin and opium internally. Rest, laxatives, opium, strong coffee to allay irritability of the nervous system.

Resorcine. Antagonists—Stimulants, atropine, as a cardiac and respiratory stimulant hypodermically, heat to the extremities, amyl nitrite inhalation, friction and galvanism. Antidotes—Stomach pump, albumen, saccharated lime or soda; as wash for the stomach, emetics; olive oil internally.

Serpent venom. Antagonists—Strychnine hypodermically, alcohol, brandy freely, potassium iodide, antidotes—Potassium permanganate hypodermically, chloride of lime solution (1 in 60) hypodermically, hypochlorites of lime or sodium, gold chloride, antivenene, strong carbolic or mineral acids as caustic, after forcible sucking of the wound, liquor ammoniæ hypodermically.

Silver Salts. Antagonists—Castor oil, tea, arrowroot, potassium iodide, milk and opium to allay irritation. Antidotes—Alkalies, albumen, stomach pump; emetics of warm water; common salt precipitates silver and act as an emetic; and cathartics.

Tobacco—Antagonists, strychnine, alcohol, ammonia, ergot, digitalis, belladonna, brandy, strong coffee, warmth to the surface, friction, artificial respiration, recumbent posture. **Antidotes**—Tannin, followed by emetics or stomach pump, iodides.

Classification of medicines according to their effects on the human system.

In the following pages they are treated in an alphabetical order :—

Acids.—These are substances which give acid reaction on blue litmus paper or neutralize the alkalinity of alkaline substances forming neutral salts. Medicinally they are caustic in a concentrated form and astringent when freely diluted. They increase the coagulability of the blood and cause contraction of the blood vessels and thus check the secretions of glands having acid secretions. Acids given before meals, therefore, check the production of gastric juice. They, however, stimulate or increase the production of pancreatic secretion which is alkaline in reaction. Acids are either mineral or organic. Organic acids exist both in plants and animals. With alkalies and alkaloid bases they form salts. (See index.)

Alkalies or antacids.—These agents neutralize acids. In a concentrated form, they also, like acids, corrode the tissues. Internally they check the alkaline secretions, and increase the acid secretions when in contact with the ducts of the glands. Alkalies taken into the stomach increase the production of acid gastric juice.

Alkalies are divided into direct antacids and indirect or remote antacids. Direct antacids are those which lessen the acidity in the stomach, neutralize acids of fermentation and prevent dyspepsia. Indirect alkalies, otherwise known as remote antacids, have no power over acidity in the stomach, as they are neutral in reaction. They are oxidized in the blood and excreted as carbonates in the urine. They are mostly neutral salts of alkaline bases combined with vegetable acids, which are broken up in the system and alkaline bases liberated.

Direct antacids.—These include :—Aromatic spirit of ammonia, calcium sacharata, carbonates and bicarbonates of ammonium, calcium, lithium, magnesium, potassium and sodium ; cowries ashes, egg shell, hydrates of ammonium, calcium, potassium, and sodium, lime water, chalk, magnesia calcined, oyster shell, purvalu, samudraphena, sankh.

Remote antacids.—These are vegetable acids as acetic, citric and tartaric, combined with alkalies as potassium, sodium, and lithium.

Anæsthetics.—Drugs which reduce or temporarily destroy sensation. Their action may be either central, peripheral or along the course of nerve fibres. Anæsthetics may be general or local. General anæsthetics include certain volatile substances belonging to the group of alcohols and ethers. These, when inhaled in sufficient quantities, produce complete unconsciousness and loss of sensation (anæsthesia) and also lessen motor power.

Local anæsthetics and anodynes. These act upon the sensory nerves, reduce their functions until they lose their power of receiving or conducting sensations.

Some act by directly depressing the end organs in the skin, others by affecting or lessening the conductivity of sensory nerves, while some by indirectly reducing the local circulation. Anodynes diminish for a time the sensibility of the skin or of the mucous membrane, while local anæsthetics destroy them temporarily.

Acetanilid—General.
Acetone—Local.
Acid acetic glacial and chloroform —Local.
Acid carbolic—Local.
Do. carbonic.
Do. di-iodo salicylic.
Do. hyperosmic.
Do. sulpho-anilic—General.
Æther sulphuric—General as inhalation—Local as spray.
Æther with pulvis camphor (2 to 1)—Local anæsthetic.
Alcohol—General and local.
Ammonia water.
Amyl hydride—Local.
Amyl nitris.
Anæsthetic ether compound—Local.
Anestyle or anesthyl—Local.
Anozal—Local.
Antipyrin—Local.
Aristol—Local anæsthetic.
Asaprol—General.
Benzyl tropine.
Beta eucaine hydrochloride.
Bisulphide of carbon.
Butyl chloral hydrate—General.
Carbon tetra chloride.
Carbonic acid gas.
Chloral hydrate.
Do. hydrate and carron oil (1 in 15).
Do. hydrate and camphor.
Chloralimid.
Chloroform.
Chloroform and cocaine inhalation.
Creosote.
Dionine.
Ether spray.
Ethydene dichlorid (inhalation).
Ethyl bromide inhalation.
Ethyl chloride (spray).
Do. iodide.
Eucaine.
Eugenol.
Euphorine.
Extreme cold.
Guaiacol calcii—Local.
Heroine.
Holocaine 1 per cent. solution for the eyes.
Hydramyl ether.
Hydrogen peroxide.
Ichthyol—Local.
Iodoform (local).
Iodol (local).
Isobutyl nitris.
Kandal.
Kryophenin.
Lactophenine.
Lead acetate (solution).
Methyl chloride (tampon).
Methylal (inhalation).
Methylene bichloride (inhalation).
Naphthalene (local).
Nirvanin.
Nitrous oxide gas inhalation.
Orthoform.
Pental.
Phenacetin—General.
Pyoktanin (local).
Rhigolene (spray).
Tonga.
Tropa cocaine (for the eyes).

Alteratives.—A group of remedial agents which promote metabolism, alter the course of morbid condition of the blood and tissues, and possess a well-marked, but rather ill-understood, action upon the general system. They change the morbid processes of nutrition, break up newly deposited or diseased fibrin and disorganize syphilitic growths, and by acting upon the sympathetic system promote the absorption of the morbid products. They are also known as

resolvents and discutients. Physiologically, they stimulate the lymphatic system.

Abrak.
Acid arsenious.
Do. hydriodic.
Do. hydrobromic.
Do. perosmic.
Adrenal extract.
Ammonium benzoate.
Do. bromide.
Do. chloride.
Do. fluoride.
Do. iodide.
Amyl iodide.
Antimony salts.
Arsen hæmol.
Arsenic and mercury iodide solution.
Arsenic chloride.
Arsenites and arsenates.
Auri arsenii et hydrargyri bromidum.
Auri bromidum.
Auri iodidum.
Auri et sodii chloridum.
Barii chloridum.
Barii iodidum.
Barium sulphide.
Benz-iod hydrinum.
Bitumen.
Bromo hæmolum.
Cadmium salts.
Calcium hippurate.
Calcium sulphide.
Cod liver oil.
Copper bhasm.
Cupro hæmol.
Ethyl iodide.
Ferri arsenas.
Do. benzoas.
Do. bromidum.
Do. succinas.
Do. sulphuretum.
Gaduol.
Glycerophosphates.
Gold salts.
Hydrargyri bin iodidum.
Do. perchloridum.
Do. sozoidolum.
Do. subchloridum.
Do. succinidum.
Do. sulphatum nigrum.
Do. sulphuratum rubrum.
Ichthalbin.
Iodia.
Iodides.
Iodine.
Iodohæmol.
Iodothyrin.
Manganese dioxide.
Mercauro, mercuro iodo hæmol.
Methylene blue.
Ovarian extract.
Potassa sulphurata.
Potassium chlorate.
Do. iodide.
Raja-mrag ank-rasa.
Rubidium iodidum.
Silver iodide.
Silver salts.
Sodii hypophosphis.
Do. hyposulphis.
Do. iodide.
Sodi arsenias.
Sodium chlorate.
Sonchol salts.
Sozoiodol mercury.
Splenic extract.
Strontii iodidum.
Strontium arsenite.
Sulphur.
Thiocol.
Thyroid gland extract.
Uranium nitrate.
Vangashwar rasa.
Zinc oxide.
Zinc phosphate.

Analgesics and Anodynes.—These are agents which relieve or remove pain. The term "analgesics" is applied to drugs which relieve actual pain, while anodynes relieve ill-defined pain and general discomfort. In practice, however, both these terms are convertible and used indiscriminately. They act

by depressing the sensory centre in the brain or by reducing the activity of the sensory nerves.

Abrastol.
Acetanilid (internally and locally).
Acetopyrin.
Acetyl phenyl hydrazine.
Acid carbolic (anodyne.)
Do. di-iodosalicylic.
Do. salicylic.
Do. sulpho-anilic.
Agathin.
Akolethe.
Alphol.
Ammonium iodide.
Ammonol.
Analgesine.
Antiarthrin.
Antikamnia.
Antiphlogistine.
Antipyrin with salol.
Apolysin.
Asaprol.
Asepsin.
Bromides.
Butyl chloral hydrate.
Chloral hydrate and morphine (internally in cancer, colicky pain gastralgia, gallstone, rheumatism).
Chloralamid.
Chloroform.
Chroton chloral.
Creosote.
Dionin.
Ether, spray.
Ethyl chloride, spray or internally.
Exalgine.
Formanilid.
Guaiacol with glycerin (locally as a paint or alone hypodermically.
Guethol.
Holocaine.
Hypnal.
Ichthyol (anodyne).
Iodides (in nocturnal pains in the head).
Iodoform suppositories (to relieve pain of the rectum or bladder).
Iron with belladonna (in wandering pains).
Kryofin.
Lactophenin.
Malakin.
Methacetin.
Methyl chloride.
Methylene blue.
Neurodin.
Nitroglycerin.
Orthoform (local).
Peronin.
Phenacetin.
Phenalgin.
Phenocoll hydrochloride (in pains of influenza, and in gouty and rheumatic pains).
Phenyl urethane.
Potassium salicylate.
Pyoktanin (anodyne.)
Pyrodin.
Quinine salicylate.
Resorcine.
Salicylamide.
Salipyrin.
Salol.
Salophen.
Sodii nitris.
Sodium paracresotate.
Solanine.
Thermodin.
Tonga.
Triphenin.
Tropa cocaine hydrochlorate.

Anaphrodisiac.—Sedatives of the sexual organs.—These are medicinal agents which lessen the sexual desire or lower the sexual function. They act by limiting the supply of blood to the generative organs, or through the nervous system by lowering the excitability of the local peripheral nerves or the nervous centres presiding over the generative function.

Alkalies, acid-sulphuric dilute (in nymphomania due to hæmorrhoids).
Antimony salts.
Bromalin.
Bromides.
Bromipin.

Cerebrin (in nymphomania).
Cocaine solution, 4 per cent. (locally applied upon the glans penis).
Ether with camphor.
Featherbed, ice locally.
Iodides.
Nauseants.
Nervine sedatives.
Orchitic extract.
Potassium iodide.
Purgatives.
Salines.
Sodii salicylas.
Vascular depressants.
Venesection.
Warm and heavy clothings.

External remedies.—Cliterodectomy, close study, cold baths, cold water to the genitals, counter-irritants. Diet—Poor, vegetable.

Anhydrotics or Antihydrotics.—Drugs which check or diminish perspiration. Their action is opposed to that of diaphoretics. They act by depressing the functions of the sweat glands, by limiting the circulation or depressing the nervous centres regulating the function.

Hyperidrosis is the term applied to excessive perspiration or night sweats.

Acid boracic, naphthalin, oleate of zinc and pilocarpine.
Acid carbolic dilute as bath for general sweating.
Acid carbolic with glycerin as lotion or ointment for fœtid sweats.
Acid phosphoric dilute, internally.
Acid salicylic with borax and talc in fœtid sweats.
Acid salicylic with alum (1 to 9).
Acid sulphuric aromatic to check sweats of phthisis.
Acidulated water for sponging.
Aluminii acetas liquor as lotion, in fœtid perspiration.
Aluminii oleate, as antiseptic (applied to axilla and groins).
Alum powered for sweating in axilla and groins.
Arsenic oleate.
Bismuth subnitrate.
Boro-glycerin.
Borax.
Chloral hydrate (1 in 50) solution (locally.)
Chloralum.
Chromic acid solution, 10 per cent.
Cold (locally).
Cupri acetas.
Diachylon ointment (to remove fœtor.)
Emol.
Ferri perchloridi.
Formaldehyde.
Hydrargyri oxidum flavum, 5 grs. to 1 oz. of vaseline.
Ichthalbin.
Ichthyol.
Iodoform.
Iron chloride with glycerin.
Kaolin (locally).
Lead acetate with glycerin as dusting powder (for fœtid perspiration).
Mercury (white precipitate) ointment. Naphthol with glycerin (1 to 2) (locally). Naphthol with starch or sulphur (1 to 50) (as dusting powder). Naphthol and alcohol (as solution locally).
Phenol with cinnamon oil and olive oil (locally).
Potassium permanganate 1 dr. with belladonna 1 gr. in 1 oz. of water as solution locally.
Potassium or sodium tellurate (as dusting powder).
Salicin (in night sweats).
Sodium carbonate solution (locally).
Sodium chloride solution (locally).
Tannoform.
Zinc oleate with thymol and emol as dusting powder.
Zinc oxide with kaolin as dusting powder.
Zinc oxide 3 grs. with belladonna ½ gr. (internally).

Paraldehyde.
Pepsine (10 grs. after food).
Peptenzyme.
Phenocoll with piperazine (15 grs. each).
Piperazine (15 grs.).
Potassium acetate (in vomiting of pregnancy and that due to albuminuria).
Potassium bromide (in pregnancy due to uterine diseases).
Potassium nitrate (½ gr. every few minutes).
Resorcin.
Salicin.
Seidlitz powder.
Silver nitrate (in nervous vomiting).
Soap and warm water (as rectal enema).
Sodium bicarbonate in milk.
Sodium phosphas effervescens.
Sodium sulphate (5 grs. in sarcinæ and in vomiting due to acid fermentation).
Sodium sulpho carbolate (in vomiting of pregnancy).
Sodium hyposulphis.
Somatose (in vomiting of pregnancy).
Strontium bromide 5 grs., if due to pregnancy.

External Remedies.

Blisters on the epigastrium.
Cold compress to the epigastrium.
Dilatation of the os cervix in vomiting of pregnancy.
Electricity.
Enemata (nutrient).
Enemata sodium bromide and opium.
Hot spongiopiline to the head.
Hot water to drink.
Ice bag over the stomach.
Ice to suck.
Injection, rectal or vaginal.
Leeches to the pit of the stomach.
Rectal medication.

Anti-Fermentatives—

Asperin.
Benzbetal.
Benzine.
Bismuthi sulphis.
Creosote.
Glycerin.
Hydrargyri iodidum rubrum.
Naphthaline tetrachloride.
Potassii sulphis.
Sodii hyposulphis.
Sodii silicatis (liquor).
Iodine trichloride.
Resorcin.
Saccharinum.

Antilithics and Lithontriptics—

Antilithics.—These are agents which prevent the formation of the renal, vesical or biliary calculi. *Lithontriptics.*—These are drugs which promote solution or breaking up of concretions when already formed.

Acid benzoic and benzoates (in phosphatic cases).
Acid hippuric.
Acid hydrochloric dilute (2 ms. to 1 oz., injected into the bladder to prevent phosphatic deposit).
Acid lactic (to remove deposit of phosphates, oxalates and urates, and to assist digestion).
Acid nitro-hydrochloric dilute injection into the bladder in oxalic acid calculi.
Acid nitric dilute (in phosphatic calculi).
Acid sulphuric dilute.
Acid phosphoric dilute.
Alkalies, alkaline mineral waters, Vichy waters (effect solution of biliary calculi).
Ammonium benzoate (in ammoniacal urine loaded with phosphates).
Ammonium borate with flax seed tea (20 grs. to 1 oz., used in colic due to the presence of uric acid).
Ammonium chloride.
Ammonium phosphate.
Amyl valerianate (in hepatic colic).
Antiarthrin.

Bile, inspissated (in hepatic cases).
Boracite.
Boro citrate of magnesia and soda, solvent of uric acid calculi.
Boro tartrate of potassium (solvent for uric acid).
Butter (in hepatic calculi).
Calcium carbonate.
Calcium hippurate.
Carbonated water for oxalic acid calculi.
Carbonates, citrates and acetates of potassium, sodium and lithium.
Carlsbad salts.
Chloral hydrate (to relieve the pain).
Chloroform (internally or as inhalation).
Ether and turpentine, known as Durande's solution (½ dr. each on sugar as a solvent remedy in hepatic concretions).
Eunatrol.
Ferri succinas or hydrated peroxide of iron (to dissolve gall stones).
Formin (in uric acid calculi).
Glycerin (a good remedy for biliary calculi).
Lead acetate (½ gr. to 1 oz. of water injected into the bladder to prevent formation of phosphatic calculi).
Lithii benzoas and lithii iodidi.
Lithium bromide, carbonate, benzoate, hippurate (uric acid diathesis).
Lithium glycerophosphate.
Lycetol (in uric acid calculi).
Lysidin (in uric acid calculi).
Magnesia levis and magnesia ponderosa.
Mercurial purgatives as Blue pill (with rhubarb magnesia).
Ox gall (in gall stone).
Piperazine (solvent for uric acid).
Piperidine-bitartrate.
Potassii benzoas.
Potassii permanganas (uric acid, brick-red sediments).
Potassium boro tartrate (uric acid deposit).
Potassium salts (as solvent for uric acid).
Potassium citrate (for bloody urine and uric acid crystals).
Salicylate of sodium (as a cholagogue in gall stones).
Saliformin (in uric acid).
Sapo mollis or curd soap (as a uric acid or phosphatic solvent).
Soap castile (in biliary calculi).
Sodii hippuras (Dose—5 to 30 grs.).
Sodium benzoate and salicylate with nux vomica (in biliary calculi).
Sodium bicarbonate (in biliary calculi).
Sodium oleate (in gall stone).
Sodium phosphate (40 grs. to prevent recurrence of gall stone).
Sodium salicylate (increases the formation of bile and hence useful in cases of tendency to gall stone).

External Remedies.

Baths.—Nitro-muriatic acid baths, to relieve pain and promote expulsion of stone.

Friction over the hepatic region if pain is due to gall stone.

Fomentation, to relieve the pain.

Ice.—Application.

Kneading from the region of the gall bladder to the navel.

Antiperiodics.—Some diseases have the peculiarity of showing recurrences or exacerbations at stated periods, such as malarial fever, neuralgia, &c. Medicinal agents which lessen the severity of such paroxysms or prevent such recurrency are known as antiperiodics. In the case of certain periodic fevers, these drugs

probably act by arresting further development in the blood of successive crops of pathogenic germs or organism causing those disorders.

Acid arseniosum.
Do. salicylic.
Ammonii picras.
Ammonium fluoride.
Antimony potassio tart.
Arsen-hæmol.
Carbamide urea.
Cold (locally).
Counter-irritation.
Ferri et quininæ citras.
Kashisa-di-tel.
Local depletion.
Mercury preparations.
Phenocoll.
Potassium nitrate.
Purgatives.
Rest.
Sodii chloridum.
Do. fluoridum.
Salicin.
Salicylates.

Antiphlogistics.—These are remedial measures employed to reduce inflamation of serous membranes, of the respiratory and alimentary track, and of internal organs.

Acetanilid.
Acid salicylic.
Alkalies.
Antiphlogistine.
Antipyrin.
Calomel.
Tartar emetic (respiratory).
Ichthalbin (internally).
Ichthargen.
Ichthyol (locally).
Lead salts.
Mercury as calomel for inflamation of the serous membranes.
Naphtalene tetrachloride.
Potassium nitrate.
Resinol.
Retinol (local).

External Remedies.

Blisters.
Cold (locally).
Counter-irritation.
Ice (locally).
Leeches.
Purgatives.
Rest.
Venesection.

Antipyretics.—These are drugs or measures which reduce abnormal or excessive body temperature. This class includes a large number of synthetically prepared drugs introduced of late into general practice and some of them given place in the new pharmacopœia. They act by promoting the loss of heat or by lessening the production of heat. The production of heat may be lessened by lessening the tissue change or by reducing the circulation. The loss of heat may be promoted by dilating the cutaneous vessels, thus producing increased radiation, by producing perspiration and its evaporation, or by abstracting heat from the body.

Those which diminish tissue changes—

Acetanilid.
Acid benzoic.
Do. carbolic.
Do. di-iodi-salicylic.
Do. paracresotic.
Do. picric.
Ammonol.
Ammonium benzoate.
Ammonium picrate.
Analgesin.
Antipyrin.
Do. salol.
Antithermin.
Apolysin.
Asaprol.
Asperin.
Benzanilid.
Chinolin.
Creosote.
Essential oils
Eucalyptol.
Guaiacol carboxylic acid.
Hydracetin (1 to 2 grs.).

Hydroquinone.
Iodoantifebrin.
Iodopyrin.
Kairin.
Lactophenine.
Malakin.
Methacetin.
Methyl salicylate.
Phenacetin.
Phenalgin.
Phenocoll hydrochlorate.
Phenoresorcin.
Picric acid.
Piperonal.
Pyramidon.
Pyrantin.
Pyrocatechin.
Pyrodin.
Pyrosol.
Quinalgen.
Salicin.
Salicylanilide.
Salicylic acid.
Salipyrin.
Salocoll.
Salol.
Salophen.
Sodii benzoas.
Sadium salicylate.
Thymol.
Wet packing.

Those which abstract heat from the body.

Cold baths.
Do. drinks.
Cold sponging.
Ice to the surface.

Those which produce perspiration and evaporation.

Acetanilid.
Acetyl phenyl hydrazin.
Ammonium acetate solution.
Do. carbonas.
Antimonials.
Antipyrin.
Antisepsin.
Antithermin.
Asaprol.
Chinolin.
Chloralamide.
Creosote.
Dithion.
Euphorine.
Formanilide.
Guaiacol preparations (internally or with olive oil (1 in 8) or as an inunction).
Hydroquinone.
Kairin.
Kryofine.
Methacetin.
Neurodin.
Nitrous ether.
Phenacetin.
Phenocoll.
Phenoresorcin.
Piperine.
Potassii salicylas.
Pyramidon.
Resorcine.
Sodium paracresotate.
Do. salicylate.
Thallin.
Do. sulphate.
Thermifugin.
Thermodin.
Thymol.
Tollypyrin.
Tolysal.
Triphenin.

Those which reduce circulation.

Antimonials.
Blistering.
Cupping.
Euphorine.
Exalgine.
Leeching.
Piperonal.
Poultices.
Purgatives.
Pyratin.
Pyramidon.
Pyrodine.
Resorcin.
Venesection.

Those which dilate the cutaneous vessels and produce increased radiation of heat.

Acid carbolic.
Alcohol.
Guaiacol.
Nitrous ether.
Poultices.

Antipurulents, Antiputrescents.—These are medicinal agents which correct the blood dyscrasia which leads to the formation of pus or to tissue disintegration.

Echthol.
Engenol.
Methacetin.

Antiseptics.—These are medicinal agents employed to prevent or retard septic or putrefactive decomposition. They act by either destroying or arresting the development or activity of micro-organisms which produce such decomposition: some are very powerful in their action, while others are feeble.

Medicinally some of the former are very poisonous in their topical effect, as they destroy—if undiluted—the tissues with which they come in contact, *e.g.*

Minerals—
Acid arsenious.
Do. boric.
Do. carbonic.
Do. hydriodic.
Do. nitrous.
Do. sulphurous.
Alembroth gauze.
Alumen acetate liquor (local).
Do. boroformate.
Do. chloride.
Do. exsiccatum.
Do. oleas.
Aluminium sulphite.
Ammonium benzoate.
Do. fluoride.
Do. persulphate.
Do. salicylate.
Argentamine.
Argenti citras.
Do. chloridum.
Do. cyanidum.
Do. nitras.
Do. sulpho-carbolas.
Bismuthi phosphas.
Do. iodopyrogallas.
Do. phenylicum.
Do. oxysalicylas.
Do. sulpho-carbolas.
Do. subiodidum.
Bismuthol.
Boroglyceride.
Boro-phenol.
Bromine.
Cadmium iodide.
Cadmium sulphate.
Calomel.
Calcium bisulphite solution.
Do. chloride.
Do. permanganate.
Do. salicylate.
Calx chlorinata.
Do. iodinata.
Cantons phosphorus.
Chlorinated lime.
Do. soda.
Chlorine.
Copper arseniate.
Do. sulphate.
Earth.
Ferrous sulphate.
Fuchsine.
Glycerin.
Glycozone.
Gold chloride.
Guaiacol carboxylic acid.
Guaiacol salicylas (intestinal).
Guaiacol calcii.
Guaiaperol.
Hydrargyri oxidum.
Do. oxycyanidum.
Do. zinco-cyanidum.
Hydrogen peroxide.
Iodine.
Do. trichloride.
Iodo-salicylic acid.
Lead lotion.
Lithium sozoidol.
Magnesii boro-citras.
Magnesium sulphate,
Do. salicylate.
Mercury bichloride.
Do. cyanide.
Do. naphthol.
Mercurial sozoiodol.
Oxygenated water.
Potassii nitras.
Potassium bichromate.
Do. permanganate.
Do. sozo-iodol.
Silver nitrate.
Do. salts.
Sodii bisulphis.
Do. chloras.
Do. chloridum.
Do. fluoridum.
Do. fluosilicas.
Do. silicas.
Do. salicylas.
Sodium boro-benzoate
Do. hyposulphite.
Strontium chloride.
Sulpho-carbolic acid.
Terrol.

Organic carbon agents—

Acetanilid.
Acid carbolic.
Do. do. oil (carbolized oil).
Do. do. and shellac (1 to 3) (as plaster).
Do. do. with resin and paraffin (as gauze).
Do. do. with oxide of lead.
Do. cinnamic.
Do. cresotic.
Do. cresylic.
Do. iodosalicylic.
Do. oxy naphtoic (alpha).
Do. para acetic.
Do. do. cresotic.
Do. phenyl propionic.
Do. picric.
Do. pyrogallic.
Do. salicylic as lotion or ointment.
Do. trichloracetic.
Actol.
Adhesol (local).
Airol.
Alcohol.
Do. with potas bicarb. and castile soap.
Aldehydum formicum.
Alphol (intestinal).
Alsol.
Aluminol.
Aminol.
Amyloform.
Anaphthol.
Anisic acid.
Antipyrin.
Antinosin.
Antiphlogistine.
Antipyonin.
Antisepsin.
Antiseptic eau-de-cologne.
Antisepticine.
Antiseptin.
Antiseptol.
Argentamine.
Argentol.
Argonin.
Aristol.
Asaprol.
Aseptol.
Baptisin.
Benzbetol.
Benzo para cresol.
Benzol.
Benzonaphthol (intestinal).
Benzosol.
Betol.
Bismal.
Boral.
Borine.
Borolyptol.
Borophenol.
Borsalyl.
Carbo lignii.
Chinolin sulpho-cyanas.
Chinoline.
Chinosol.
Chloral hydrate (locally).
Chloralum.
Chloratol.
Chloroform.
Creolin.
Creosote.
Cresalol.
Cresine.
Cresol salicylas.
Cutol.
Dermatol.
Dextroform.
Diaphtherin.
Diaphthol.
Di-iodo beta-naphthol.
Di-iodoform.
Dithion.
Enterol.
Eserine.
Ethylene periodide.
Eucalyptol.
Eucalembroth gauze.
Eudoxine.
Eugenoform.
Eugenol.
Do. acetamid.
Europhen.
Eurphorin.
Fel bovis.
Fluorides.
Form-aldehyde.
Fuchsine.
Gallactophenone.
Gallo bromol.
Geosote.
Glycerin.
Glycozone.
Guaiacetin,
Guaiacol benzoas.
Guaiacol carboxylic acid.
Guaiacyl calcii.
Guaiacol salicylas.
Guaiaperol.
Hetocresol.
Hydrargyri naphthol acetas.
Hydrochinon.
Hydrogen.
Hydronaphthol.
Hydroxylamine.
Iodine trichloride.
Iodoform.
Powder, emulsion, wool and ointment.
Iodol.
Itrol.
Izol.
Jatrol.
Kaolin-ointment.
Listerine.
Loretin.
Losophan.
Lyptol.
Lysol.
Methyl salicylas.
Microcidine.
Monobrom acetanilid.
Naphthol.
Naphthaline tetrachloride.
Nosophen.

Orphol.
Orthoform.
Oxynaphtholic acid.
Paraformic-aldehyde.
Phenosalyl.
Piperonal.
Pixine.
Pyoktannin.
Pyridine.
Pyrodin.
Resorcine.
Resorcinol.
Retinol.
Saccharum.
Sal acetol.
Saligenin.
Salitannol.
Salol.
Salophen.
Salumin.
Sanitas oil and fluid.
Sanitary wood, wool, wadding.
Sanoform.
Sodii paracresotas.
Sodii sulphis.
Do. sulpho-carbolas.
Solutal.
Solveal.
Sozal.
Sozoiodol mercury.
Do. potassium.
Sozoiodol sodium.
Do. zinc.
Sulphaminol.
Tannoform.
Terebenum.
Thalline sulphate.
Thallinæ periodidum.
Thalline periodosulphate.
Thioform.
Thiophene-di-iodidi.
Thiosinamine.
Vinegar.
Xeroform.

Antisialics, Antisialagogues.—These are agents which diminish the secretion of salivary glands. Some of them act by paralyzing the terminal ends of the nerves of secretion; others by diminishing the supply of blood to the glands; others again by lessening the reflex excitability of the nerve centres, and a majority of them by diminishing the secretion directly.

Acids (internally and as gargle).
Alcohol diluted (as a gargle).
Alum with plumbi acetas and myrrh (1 in 40) as gargle.
Beta naphthol.
Borax and glycerin (locally).
Brandy and water (as a gargle).
Chlorinated lime or soda if much fœtor in the mouth.
Cotoin.
Creosote.
Iodine tincture 2 drs. to 8 ozs. of water (as a gargle).
Plumbi acetas and alum (as a mouth-wash).
Potassium iodide (used with care).
Do. bromide with hyoscyamus and belladonna (in salivation of pregnancy).
Do. chlorate as gargle and internally.
Sodii chloras.
Stimulants.
Zinc chloride (2 grs. to 1 oz. locally).

Antispasmodics.—These are agents which prevent, relieve or control morbid spasms of voluntary and involuntary muscles in any part of the body. Their mode of action varies. Some of them act by controlling spasms, by tonic stimulation of the higher nervous centres, the co-ordinating power and the circulation; others act by depressing the motor centres; others again act by paralyzing the end organs of the vasomotor nerves. A few antispasmodics depress all the vital functions. A number of them stimulate muscular fibres of the bowels and assist in expelling accumulated gases.

Alcohol.
Ambergris.
Ammonium valerianate.
Amylene hydrate.
Aniline camphorate.
Antispasmin.
Arsenic.
Benzene.
Bisulphide of arsenic.
Bromalin.
Bromides.
Bromoform.
Castoreum.
Celerina.
Chloral hydrate.
Chloroform.

Cochineal.
Copper salts.
Creosote.
Erythrol nitras.
Ether.
Do. aceticus.
Ethyl bromide.
Goruchana.
Musk.
Nitrites.
Nitroglycerin.
Paraldehyde.
Potassium cyanide.
Resorcin.
Sodii fluoridum.
Do. nitris.
Sulphonal.
Viverra civetta.
Zinci bromidum.
Do. oxidum.
Do. sulphas.
Do. valerianas.

Antizymotics.—These are medicinal agents which arrest fermentative processes, either by destroying or rendering inactive the causative ferments. Fermentation is a process of decomposition, due to a certain group of carbon compounds, known as ferments, acting upon other carbon compounds and setting free elementary constituents of the latter, which form a third group of carbon compounds by the re-arrangement of the freed molecules.

The ferments producing these changes are either enzymes or unorganized ferments as diastase, ptyalin, pepsine, &c., and the organized ferments as yeast, bacteria &c.

Antizymotics include antiseptics and disinfectants.

Aphrodisiacs.—These are drugs having the properties of stimulating the sexual appetite and increasing the power. Their action may be direct or reflex on the cerebral or the spinal genital centres.

They include bitter tonics, blood tonics and nervine tonics. All food tonics by promoting general bodily nutrition act as indirect aphrodisiacs.

Abrak.
Acid phosphoric dilute 10 ms. with pulvis cantharis, ½ gr.
Alcohol to excite genital centre in the brain.
Antipyrin in sexual exhaustion.
Antispasmin.
Arsenic (in relaxed state of the genitals).
Auri et sodii chloridi (in impotence).
Barii chloridum liquor (internally).
Bitumen.
Bromo-hæmol.
Calcii glycero-phosphas.
Cantharis.
Chloral hydrate.
Diet meat.
Ferrum arsenate (in functional cases).
Gold bhasm.
Gold chloride (in the decline of sexual power).
Hypophosphites of lime and soda.
Iron with cantharis.
Iron chloride tincture.
Musk.
Mylabris chichorii.
Oyster shells.
Pearls.
Phosphorus pills.
Phosphorus with cantharis.
Potassium bromide (as a sedative in irritability of the urino-genital organs.)
Silver nitrate solution 30 grs. to 1 oz. of water with opium applied to the perineum and to the prostate through the urethra.
Silver oxide.
Sang-i-sar-i-mahi.
Spermin.
Vangashwar Rasa.
Viverra civetta.
Zinc phosphate.
Zinc phosphide.
Zebetha.

Astringents.—These are agents which contract muscular fibres and condense other tissues. They also lessen or control excessive or abnormal secretion of

the mucous membranes. Their action may be local or remote and constitutional. Local astringents cause direct irritation by affecting the part to which they are applied, thus causing contraction of the muscular fibres. Remote astringents act on the internal organs through the blood. They produce certain changes in the character of the blood and the secretions, by precipitating albumen and gelatin and thus cause condensation of the tissues.

Abrak bhasm.
Abrasham.
Acid chromic.
Do. lactic (intestinal).
Do. nitric dilute.
Do. trichlor acetic (local).
Alcohol.
Alumen exsiccatum.
Aluminii acetas (intestinal).
Do. chloridum (local).
Aluminol.
Aluminium aceto-tartrate
Do. boroformate.
Do. sulphate.
Argentamine.
Bandharo.
Bezoar stone.
Bismal.
Bismuth salts.
Do. naphthalate (intestinal).
Bismuthi et ammonii citratis liquor (intestinal)
Bole, Armenian.
Boral.
Cadmium salicylas (intestinal).
Do. sulphate (intestinal).
Calcii boras.
Do. carbonas præcipitatus.
Do. salicylas.
Do. sulphas.
Calcii sulphophenas.
Copper arsenate (intestinal).
Do. sulphate.
Creosal.
Creta preparata.
Cutol.
Dermatol.
Elephant's teeth.
Ferri alumen.
Do. et ammonii citras.
Do. perchloridum.
Do. pernitratis.
Do. salicylas.
Do. subsulphas.
Gallal.
Gil-i-Abrorshi.
Gil-i-far.
Gil-i-surkh.
Geru matti.
Gul-e-armani.
Gul-e-Multani.
Lead bhasm (intestinal).
Liquor calcis.
Liquor ferri pernitratis.
Litharge.
Loha bhasm.
Magnesium silicate.
Mica.
Milk somatose.
Multani mati.
Nâg bhasm.
Ochre.
Orphol.
Pakhanbhed.
Purvalun bhasm.
Ratanjote.
Rupa bhasm.
Plumbi acetas (intestinal)
Do. carbonas do.
Do. oxidum do.
Do. stearas do.
Samber singadun.
Sangjirun.
Silicon.
Silver dioxide.
Do. lactate.
Do. nitrate.
Soapstone.
Stag's horn.
Sona geru.
Tannal bin.
Tannegen.
Tanocal.
Tannoform.
Tannone
Venetiar talc.
Water glass.
Yellow ochre.
Zeher morâh.
Zeroform.
Zinci acetas.
Do. oxidum.
Do. carbonas (intestinal).
Do. permanganas.
Do. sozoidol.
Do. subgallas.
Do. sulphas.
Do. sulpho-carbolas.

Carminatives.—These are feeble exhilerants and diffusible stimulants both of the bodily and mental faculties, producing a sensation of warmth throughout the body and exhilaration of spirits. But their chief value lies in their property of expelling gases from the stomach and intestines by increasing and regulating peristalsis and by relaxing the muscular fibres of the gastric orifices. They are used as very valuable adjuncts to purgatives to prevent griping.

Alcohols
Aromatic oils.
Aromatics.
Carbo ligni.
Chloroform.
Ethers.
Sonchol.
Spirits.

Cathartics or Purgatives.—These form a group of remedial agents which relieve constipation or increase the quantity and frequency of stools.

They are divided into several classes according to the intensity of their action or to the mode of their operation, *viz.*, laxatives or aperients, simple purgatives, drastic purgatives, saline purgatives, hydragogues and cholagogues.

Aperients or Laxatives.—These are the mildest cathartics producing one or two softened stools, causing moderate peristalsis and acting without any irritation.

Simple Purgatives.—These purgatives are more violent in their action than aperients, though they probably act in a similar manner. They produce greater number of motions which are more fluid and larger than those produced by aperients. Peristalsis is also more active, causing griping, and there is some sort of irritation.

Ammonium chloride (in biliousness and constipation).	Honey.	Soap.
	Hydrargyrum cum creta.	Sodii chloridum, impure.
Antimonii oxidum.	Magnesia.	Do. sulphovinas.
Castor oil.	Oat meal.	Sulphur.
Fel bovis.	Olive oil.	Yolk of egg.
Glycerin.	Pilula hydrargyri.	

Drastic Purgatives.—These are drugs which are still more violent than simple purgatives, and in large doses act as irritant poisons. In medicinal doses they produce a large number of copious stools of a fluid character. The griping is more severe and there is considerable gurgling with tenesmus.

Saline Purgatives or Salines.—These form a group of purgatives consisting mostly of neutral salts of alkaline metals. They act by increasing fluid secretion of the intestines, by stimulating the intestinal glands, and thereby producing large watery stools. They also increase peristalsis. They should be well diluted before giving.

Alum.	Oxgall.	Sodium phosphate.
Calomel.	Panch lavana.	Do. and potassium tartrate.
Citrate of magnesium.	Potassium tartrate.	
Glycerin.	Do. bitartrate.	Do. sulphate.
Magnesium sulphate.	Rock salt.	
Mercury.	Sodium chloride.	

Hydragogue Purgatives.—These combine the action of salines and drastic purgatives and are more violent than both. They remove a large quantity of water from the intestinal vessels and are very useful in dropsy and congestion of various organs.

Calomel.	Potassium bitartrate.	Sodium sulphate.
Magnesii sulphas.	Do. sulphate.	Waters—Friedrichshall, Hunyadi Janos, Carlsbad, &c.
Mercury with chalk.	Salines in large doses.	
Pil. hydrargyri.	Sodium phosphate.	

Cholagogues.—These purgatives are similar in action to drastic or saline purgatives, but they act upon the biliary secretion, removing the bile from

the duodenum and thus preventing its re-absorption into the portal circulation. The motions are large, generally of a green colour and liquid in character. Drastic purgatives and salines are more or less cholagogues in small doses—

Alumen exiccatum.	Ichha bhedi rasa.	Mistura magnesia et asafœtida.
Ammonii phosphas.	Magnesii carbonas levis.	
Calomel.	Do. do. ponderosa.	
Eunatrol.		

Deliriants.—These form a group of narcotics, disturbing principally the higher functions of the brain. Under their influence, the mind gets confused and disordered, there is, later on, loss of will power and incoherent talk, amounting in some cases to delirium and producing in some cases even convulsions. Many drugs, which in small and medicinal doses are valuable sedatives and stimulants, act as deliriants in large and toxic doses.

Alcohol.	Eau de cologne.
Chloral.	Ether.
Chloroform.	Nitrous oxide gas.

Demulcents and Emollients.—These are substances usually of an oleaginous or mucilaginous nature and soothe and protect the parts to which they are applied. They are called demulcents when they are employed to act upon mucous membranes; and emollients when applied to the skin. They act by softening and relaxing the tissues to which they are applied, thereby relieving tension, protecting the inflamed and irritated surfaces from the action of the air and from friction. Emollients, when rubbed on the skin, act by dilating the vessels and diminishing pressure on the nerves.

Acid oleic.	Emol.	Sapo mollis.
Do. stearic.	Fat.	Sevum præparatum.
Adeps.	Fossil encrinite.	Sang-i-yahud bhasm.
Do. benzoas.	Fresh liver oil.	Sang-i-yashin.
Albuminous substances.	Gelatine.	Sodium sulphoricinoleas
Bismuth oleas.	Ghee.	Spermaceti.
Bland oils.	Glycerin.	Stearate of zinc.
Butter.	Honey.	Do. of copper.
Calf's feet jelly.	Ichthyocolla.	Turtle oil.
Cera alba.	Isinglass.	Warm water.
Cetaccum.	Kaolin.	Wax.
Cod-liver oil.	Petroleum.	White of egg.
Chondrin.	Rockoil.	

Dental Anodynes.—These solutions are applied on a plaget of cotton and used for the purpose of relieving pain in toothache, due to caries of tooth exposing a nerve filament.

Carbolic acid.	Creasote.
Chioral.	Potassium chlorate.

Dentifrices.—These are powders or pastes used for the purpose of cleansing the teeth and gums. To be effective they should be rubbed with a brush. Some have only a mechanical action, while others act chemically by preventing

decomposition and acid fermentation of food-stuffs lodged between the teeth, which injure the dentine and give a foul taste and smell to the mouth. Hence most powders and pastes are combination of drugs which have a mechanical action and are antiseptics and stimulants as well.

Acid boracis with tincture of myrrh as a wash.
Acid carbolic as an antiseptic to prevent acid fermentation of food products remaining between the teeth.
Beta naphthol.
Calcium carbonate precipitate.
Chalk used for its mechanical action and its alkaline quality.
Creta preparata with magnesia carbonate and sodium salicylate.
Potassium chlorate.
Sodium fluosilicate.
Do. salicylate and tincture of myrrh (as mouth wash).

Formula—Antiseptic Dentrifrice.—Boracic acid 40, potassii chlorate 30, creta preparata 60, guaiacæ pulv. 20, magnes. carbonas 200. Used as tooth powder.

Deodorants.—These are substances which destroy foul smells. Volatile deodorants are chiefly oxidizing and deoxidizing substances. They act chemically on the effluvia or obnoxious gases. The non-volatile deodorants are absorbents. They condense and decompose the effluvia. Deodorants may or may not be antiseptics or disinfectants—

Acid boric.
Do. carbolic.
Do. chromic (oxidized).
Do. nitrous.
Do. sulphurous gas.
Aluminii sulphas.
Aluminium chloride.
Ammon persulphate.
Argentol.
Aseptol.
Borates.
Bromine.
Burnett's fluid (zinc chloride).
Calcium bisulphate.
Do. permanganate.
Charcoal.
Chlorine water.
Condy's fluid.
Chinolin-sulpho-cyanas.
Chinosol.
Chlorinated soda solution.
Coffee.
Creolin.
Cresin.
Diaphtherin.
Earth.
Eucalyptus oil.
Eucalyptol.
Eurobin.
Fluorides.
Ferrous sulphate.
Formalin as spray or dropping it hot on hot plate used as fumigation.
Formaldehyde.
Formazol.
Glycozone.
Heat (250° F.).
Hydrogen dioxide.
Ledoyan's disinfecting fluid.
Lime chlorinated.
Do. wash (freshly burnt).
Listerine.
Loretin.
Lysol.
Mercury bichloride (1 in 1,000) (solution).
Ozonic ether.
Plumbi nitras.
Potassium bichromate.
Do. chloras.
Do. permanganate.
Pyrozone.
Sanitas.
Sozoiodol salts.
Thymol.

Formulæ.—Zinc sulphate 16 ozs., sulphuric acid 1 dr., indigo blue 1 gr. Mix. A table spoonful to be added to the excreta to remove fœtor from the fœces to sterilize it.

De-oxidizers.—Reducing agents.

Eugallol.
Euresol.
Eurobin.
Ichthyol.
Lanigallol.
Naphthalin.
Resorcin.
Saligallol.
Starch.

Depilatories are remedies which remove the hair.

Arsenic yellow sulphide.	Cuprisulphate, ferri sulphate.	Hydrogen dioxide.
Ashes from firewood.		Iodine.
Barium sulphide.	Hair dyes(contain potassium permanganate, pyrogallic acid, black oxide of lead, black oxide of silver).	Mercury bichloride.
Calcium oxide.		Quick lime.
Calx sulphurata.		Silver nitrate.
Cautery.		Sodium ethylate.

Depressants.—These are substances which lower the functional activity of any particular organ. The principal depressants are—

Cerebral Depressants.—These lower or suspend the functions of the cerebrum after a preliminary stage of excitement, producing sleep or loss of consciousness, and impairment of sensibility to impressions from outside, and lowering general excitability. They act on the cells of the convolutions.

Acid carbolic.	Chloroform.	Methyl compounds.
Anæsthetics.	Cold.	Narcotics.
Analgesics.	Croton chloral.	Nitro-glycerin.
Antispasmodics (several)	Ether.	Potassium cyanide.
Bromide of ammonium.	Ethyl bromide.	Do. iodide.
Bromipin.	Galvanism.	Sedatives.
Bromo camphor.	Gold bromide.	Zinc salts.
Bromoform.	Hypnotics.	
Chloral hydrate.	Isobutyl nitrite.	

Hepatic Depressants.—These lower the hepatic functions, some by diminishing biliary secretion, some by lessening the production of glycogen, and others by reducing the amount of urea. Some purgatives, which remove a large quantity of fluid from the intestines, act as hepatic depressants as they diminish biliary secretion by lowering the blood pressure in the liver, as well as remove certain bile-producing materials.

Those which lessen the secretion of bile without producing purgative effects.

Alcohol.	Chloral.
Calomel.	Lead acetate.
Chalogogues.	Magnesium sulphate.

Purgatives lower blood-pressure in the liver and carry off materials from which bile may be formed.

Those which lessen the production of urea as alcohol.

Those which lessen the production of glycogen.

Antimony.	Arsenic.	Phosphorus.

Motor Depressants or Spinal Sedatives.—These agents depress the functional activity of the various parts of the motor apparatus, which includes the spinal cord, cerebral (motor) convolutions, the motor centres in the medulla, the motor nerve trunks, and the motor nerve end organs. Drugs which depress general muscular contractility are also motor depressants. When given in large doses they lead to complete paralysis of the motor apparatus.

Spinal Sedatives—

Antimonium tartratum.	Bromipin.	Potassium bromide.

Uterine Depressants.—These lower the uterine function by preventing uterine contraction through their depressant influence on the muscles and the nerve supply of the uterus.

Apiolum.	Chloroform.
Bromides.	Emetics.
Chloral.	Sulphate of copper.

Desiccants.—These are agents, which when applied to open wounds or to injured parts, form with the discharge a thick coating of the nature of a scab, thereby protecting them from the surrounding external influences. When of the nature of powders they are known as desiccants.

Acidum hydr.-iodicum.	Dermatol.	Kieselghur.
Adrenal extract.	Emol.	Meerschaum.
Alabaster.	Fowler's earth.	Ovarian extract.
Aluminii hydras.	French chalk.	Panisok.
Bole armenian.	Ghabhan.	Plumbi carbonas.
Bone-marrow glycerin exract.	Gil-i-abrashi.	Do. stearas.
	Gil-i-makhtum.	Sangjirum.
Boric powder.	Do. Multani.	Sodii iodidum.
Calcii sulphas exiccatus.	Gopichandan.	Splenic fluid extract.
Calx chlorinata.	Gul-i-abrorshi.	Supra renal gland extract.
Cerebrin.	Guttapercha.	
Cimolite.	Gypsum.	Talc.
Cobwebs.	Hydrargyri naphtholicum.	Thymolite.
Collodion.		Thymus gland.
Cotton.	Ichthargan.	Zehar morah.
Creta preparata.	Kaolin.	Zinc oleate.

Diaphoretics and Sudorifics.—These are remedies which produce or increase perspiration by stimulating the action of the sweat glands. Diaphoretics are milder in action than sudorifics, the latter term being used when perspiration produced is excessive. They are divided into (*a*) simple diaphoretics. These produce perspiration by simply stimulating the sweat glands, and without producing much effect on the circulation. (*b*) Nauseating diaphoretics. They, to a certain extent, depress the circulation by dilating the superficial capillaries of the skin. (*c*) Refrigerant diaphoretics. They are supposed to produce the effect by acting upon the sweat centres in the medulla and spinal cord.

Simple Diaphoretics—

Acid salicylic.	Antipyrin.	Sodii salicylas.
Alcohol.	Mercurial preparations.	Sodium benzoate.
Ammonii acetatis liquor.	Potassium citrate.	Do. nitrate.
Do. carbonas.	Do. nitrate.	Sulphurated potash.
Do. citras.	Sodii nitris.	

Nauseating Diaphoretics—

Antimonii oxidum.	Nitrous ether.	Vapour bath.
Do. sulphuratum.	Potassium nitrate.	Warm drinks.
Ether.	Tartar emetic.	Wet pack.
Muscarine.	Turkish bath.	Potassium nitrate.

Refrigerant Diaphoretics—

Alcohol.	Ether.	Potassium salts.
Chloroform.	Nitrous ether.	

External remedies—

Hot vapour to the skin. Warmth to the surface.
Warm diluents.

Digestives.—These are substances which increase the digestive powers of the stomach and intestines or directly contribute to the digestion of food in those organs by their chemical actions.

Acid hydrochloric dilute.	Extract of malt.	Papain.
Do. lactic dilute.	Hæmatin albumen.	Pepsin and its preparations.
Bynin.	Ingluvin.	
Byno hœmoglobin.	Lacto peptine.	Ptyalin.
Do. hypophosphites.	Orexine tannate.	
Diastase of malt.	Pancreatin.	

Diluents.—When the system is charged with waste materials in a concentrated form and irritation is produced, certain inert fluids are administered with a view to increase the volume of the excretory fluids, so that more of the waste products may be held in solution or suspension and so be easily eliminated. The diluents are—

Acid drinks.	Plain water.
Barley water.	Tea.

Discutients, Resolvents or Sorbefacients.—These are agents which stimulate the lymphatic system to increased activity, thereby causing the disappearance or removal of morbid or inflammatory products. They also promote absorption or imbibition of medicines and nutritive materials into the system.

Acid perosmic.	Ichthyol.	Oleic acid.
Auri et sodii chloridum.	Iodides.	Pancreatin.
Barium iodide.	Iodin.	Pepsin.
Cadmium iodide.	Iodipin.	Plumbi iodidum.
Counter-irritation.	Iodol.	Do. nitras.
Ferri bromidum.	Iodo hæmol.	Poultices.
Galvanism.	Lanolin.	Sodii hippuras.
Gold bhasm.	Malto pepsin.	Do. nitras.
Hot water bath.	Massage.	Sozoiodol salts.
Ichthalbin.	Mercurial oleate.	Vapour bath.

Disinfectants.—These are antiseptics used for the purpose of destroying, or arresting the development of, pathogenic germs of infectious diseases. Some are oxidizing agents; others form simple combination with albumen, or by chemical combinations form substitution compounds. Some again arrest molecular changes or alter the media in which the germs develop. All disinfectants are antiseptics, but all antiseptics are not disinfectants.

Acid, boric.	Benzo-naphthol.	Chinosol.
Do. carbolic.	Bismuth sulpho-carbolate.	Chlorinated soda solution.
Do. nitrous.	Borates.	Do. lime.
Do. sulphurous.	Borophenol.	Chlorine.
Alcohol.	Bromine.	Creolin.
Alsol.	Calcium bisulphite.	Disinfectol.
Aluminii sulphas.	Charcoal.	Eosote.
Aseptol.		

Eugenoform.
Ferrous sulphate.
Fluorides.
Formaldehyde.
Heat (250° F.).
Holcosol.
Hydrargyri et ammonii chloridi.
Do. perchloridi.
Hydrogen peroxide.
Iodine.
Izal.
Kashisadi tel.
Lime, fresh.
Lysol.
Listerine.
Mercury bichloride.
Naphthol.
Naphthalene tetrachloride.
Nitrous acid.
Okol.
Paraformic aldehyde.
Potassium bichromate.
Do. permanganate.
Do. sulphas.
Pyoktannin.
Silver citrate.
Sodii fluoridum.
Do. fluosilicas.
Do. sulpho carbolas.
Do. sulphis.
Sodium naphtholate.
Sozoidol salts.
Thymol.
Trichlor phenol.
Zinc chloride.
Do. sulphate.

Diuretics.—These are agents which stimulate the flow or increase the quantity of urine. They are administered with a view to remove fluid from the tissues and cavities of the body as in dropsies, to promote elimination of irritating substances such as waste products and other poisons from the system, to maintain the action of the kidneys, to dilute the urine and to alter its morbid condition. They also act in different ways. Some act through the circulation by increasing the action of the heart, or by contracting the intestinal and other vessels all over the body, thereby raising the local or general blood-pressure, or by dilating renal vessels; others act through the nervous system by stimulating the secreting cells or nerves of the kidneys; others again act by flushing the kidneys by large quantities of fluid or water taken at night or early morning. Diuretics are divided into (*a*) Refrigerant or saline diuretics.—They act by gently stimulating the renal cells and by increasing the blood-supply to the kidneys. In moderate doses they relieve the heart and general circulation, by removing some fluid from the body. But in large doses they depress the heart and impoverish the blood. (*b*) Hydragogue Diuretics.—Their action is principally through the circulation. They increase the blood-pressure by stimulating the heart to a more vigorous action or by dilating the afferent and contracting the efferent vessels. They increase the quantity of urine more than simple diuretics. (*c*) Stimulant Diuretics.—These are irritants acting directly upon the renal tissues. As they are generally eliminated by the kidney, they require to be used with caution. In small doses they increase the blood pressure in the kidneys by dilating the afferent blood vessels and thus increase the quantity of urine. But in large doses they irritate the renal cells, lower the blood-pressure by contracting these vessels and produce scanty and high-coloured urine. In still larger doses they produce inflammation of the renal epithelium, the urine becomes bloody and albuminous, and sometimes even suppressed.

Acid carbonic (refrigerant).
Do. hydrobromic dilute.
Alcohol.
Ammonium acetate (refrigerant).
Antiarthrin.
Barium sulphide.
Bitumen.
Calcium chloride (refrigerant).
Calomel-hydragogue diuretic.
Cantharides.
Carbamide urea.
Cardin.
Depletion from loins.
Diuretin—In renal dropsy.
Ferri perchloride liquor.
Ferri iodidum.
Formin.
Hydrargyri perchloridum.
Hydragogues.
Iodides.
Iodo-caffeine.
Liquor potassæ.
Lithia carbonas.
Do. citras (refrigerant).
Lithii benzoas.
Do. salicylas.

Lycetol.
Lysidine.
Magnesium sulphate (refrigerant).
Do. citrate (refrigerant.)
Methyl salicylas.
Milk (as refrigerant).
Nasrol.
Nitrites (hydragogue).
Nitrous ether (hydragogue).
Paraldehyde.
Piperazine.
Potassii acetas (refrigerant).
Potassii chloras.
Do. citras (refrigerant).
Do. nitras (refrigerant).
Do. tartras acidus (refrigerant).
Potassium chloride (as refrigerant).
Soda tartarata.
Sodii citro-tartras.
Do. hippuras.
Do. phosphas.
Do. tauro-cholas.
Sodium chloride (refrigerant).
Sodium acetate (refrigerant).
Do. boro benzoate.
Do. chlorate (refrigerant).
Strontii lactas.
Sugar of milk (hydragogue).
Terpinol.
Ulexine.
Urea (stimulant).
Uropherin.
Urotropine.

External remedies—

Alkaline mineral waters.
Counter-irritation to the loins.
Cold to the region of pubes.

Ecbolics—Oxytocics—Abortifacients-Uterine excitants.—These are agents which act by stimulating the muscular fibres of the gravid uterus to contraction. They act like emmenagogues when given in small doses. Some are supposed to act by directly stimulating the uterine centre in the cord, others by a sort of reflex action leading to contraction of the uterus.

Acid salicylic.
Aurum chloride (to prevent tendency in habitual cases).
Borax.
Curette (to hasten abortion).
Emetics (in threatened cases).
Glycerin and vinegar tampon to the os (to hasten abortion and to check hæmorrhage).
Iron with potassium chlorate (during pregnancy if fatty degeneration of the placenta previously existed).
Potassium permanganate.
Purgatives.
Stypticin.

Emetics.—These are agents which produce vomiting either by direct stimulation and irritation of the vomiting center in the medulla or by reflex irritation of the same through the direct irritation of the end organs of the gastric, æsophageal or pharyngeal nerves. The former are called the general or systematic emetics, and the latter are called local emetics.

Alum (repeated doses, as a local gastric sedative).
Antimony sulphide.
Do oxide.
Do. potassio tart (general).
Carbonate of ammonium.
Hydrargyri oxysulphas.
Do. sub-sulphas.
Plumbi acetas.
Potas bichromate.
Sulphate of copper.
Do. zinc.
Sodium chloride.
Tittilation of the fauces.
Tepid water (in quantity).

Emmenagogues.—These are remedies which increase the scanty flow of, or restore, suppressed menstruation. They produce their effect either by directly exciting or increasing contraction of the uterus by acting on the muscular

fibres or indirectly by improving the quality of blood and increasing the tone of the nervous system.

Acid, oxalic (direct).
Alcohol.
Ammonium chloride (indirect).
Argenti nitras (locally to the os).
Arsenic with iron (in anæmia of the uterus and ovaries).
Aurum chloride.
Borax (direct in small doses).
Cantharides.
Carbon bisulphide (indirect).
Codliver oil.
Fel bovis.
Ferri iodidum (indirect).
Do. peroxidum.
Ferrum redactum.
Gold salts (in torpor).
Hydrargyri bichloridi.
Do. bin iodidi (direct).
Do. chloridum.
Iodum.
Iron chloride.
Kashisadi tel.
Manganese salts (indirect).
Manganese dioxide and other salts.
Orchitic fluid extract (indirect).
Oxalic acid.
Potassium bromide.
Do. iodide.
Do. permanganate (if due to cold).
Salicylate of soda (indirect).
Silver, nitrate (locally to the os).
Sodium biborate.
Tonics.

External Measures—

Electricity to the hypogastrium.
Leeches to the genitals.
Massage.
Milk diet.
Baths.
Fresh air.
Hip-baths hot with mustard.
Ice bag to the spine.
Rubefacients to the thighs.

Formula.—Liquor hydrargyri perchloridi, 1 oz.; potassii iodidi, 30 grs.; ferri et ammoniæ citras, 1 dr.; spiritus chloroformi, 2 drs.; aqua, 8 ozs. Dose—4 to 6 drs.

Errhines and Sternutatories.—Those drugs which, when topically applied to the mucous membrane of the nose stimulate it to increased secretion, are called errhines; while those drugs which by reflex action on the fifth nerve, in addition, produce sneezing are called sternutatories. The drugs are generally applied as snuff in a state of fine powder.

Arsenic liquor (a drop into the nose).
Iodine inhalation.
Iodipin.
Orthoform.
Potassium iodide (10 grs.)
Pressure beneath nose.
Suprarenal tablets.

Escharotics or Caustics.—These are agents which destroy a tissue to which they may be applied and cause a slough. They act either by abstracting water of the tissues, by combining with the albumen of the tissue or by a corrosive deoxidation of the tissues and by conversion of the tissues into carbon and gaseous bodies.

Acid acetic glaciale.
Do. arsenious.
Do. carbolic.
Do. chromic.
Do. fluoricum.
Do. hydrochloric.
Acid lactic.
Do. trichloracetic.
Alumen exsiccata (combine with albumen of the tissues).
Antimony chloride.
Argent nitras (combine with albumen of the tissues).
Auri et sodii chloridi.
Bromine.
Bromoform.

Cadmium.
Calcii hydras (abstract water).
Calcii carbidum.
Caustic paste.
Caustic potash, lime or soda.
Cautery (convert tissues into carbon).
Copper nitrate.
Do. sulphate (combine with albumen of the tissues).
Creosote, caustic.
Cupri oleas.
Cupri subacetas.
Hydrargyri iodidum rubrum.
Hydrargyri oxidum rubrum (combine with albumen of the tissues.
Do. perchloridum (combine with albumen of the tissues).
High heat.
Iodi terchloridi.
Iodine.
Jangal (piles).
Mineral acids (abstract water).
Oleatum arsenici.
Paraform (cautery).
Phenosalyl.
Potassa cum-calc.
Potassii bichromas.
Resorcin.
Sodium ethylate liquor.
Do. hydroxide.
Water, boiling.
Zinc chloride (combine with albumen of the tissues).
Do. nitras.
Do. sulphate (combine with albumen of the tissues).

Formula—Caustic paste.—Contains dry flour 112, amylum 12, zinc chloride 10, hydrargyri perchloride 10, iodol 10, acid carbolic crystals 10, croton chloral 10, camphor bromide 10. A powerful antiseptic and hæmostatic application, forming a hard and well defined eschar.

Ciliary Excitants.—So called from their action on the cilia of the respiratory tract. These drugs when allowed to dissolve in the mouth promote expectoration and render it more fluid. Their action seems to be direct and topical, but under certain circumstances it may be of a reflex character.

Ammonium chloride. Potassium chlorate. Sodium chloride.

Exhilerants.—These include a class of stimulants, causing an exaltation of spirits by stimulating the brain and the heart, and thereby giving a sensation of buoyancy to the whole system. Pushed further, they cause intoxication, and are then called inebriants. Their effects are only short lived.

Acetic ether.
Alcohol (in the form of distilled spirit as Brandy and whisky).
Chloroform.
Ether.
Wine.

Expectorants.—These are agents which soothe the respiratory mucous membranes, modify the bronchio pulmonary secretions and aid their expulsion. Stimulant expectorants are those which stimulate the bronchial mucous membrane from which they are largely eliminated. They modify or alter the bronchial secretion, rendering it thinner and thus accelerating its expulsion. They generally diminish secretion and increase blood pressure.

Nauseaing Expecorans.—These when given in large doses act mechanically and expel the mucus in the act of vomiting. In small doses they increase osmosis from the inflamed mucous membrane and thus increase the secretion. Some expectorants act by relieving spasm of the bronchi, while others act as sedative and soothe the irritated and dry respiratory centre.

Acid, carbolic.
Alkalies.
Ammoniæ benzoas.
Ammonol.
Ammonium carbonate (stimulant).
Do. chloride (stimulants).
Ammonium salicylate.
Antikamnia.
Antimony potassium tartras (nauseating).

Antimony oxidum.	Ether.	Pyridine.
Borax.	Iodine (vapour).	Sulphur.
Chloral.	Mineral acids (stimulating).	Saccharine substances.
Ciliary excitants.		
Creosote vapour.	Potassium iodide.	

Galactagogues—Lactagogues.—These are agents which increase the secretion of milk. Some are applied externally, while others are given internally. Generally those remedial agents which increase the tone of the general system also act as galactagogues.

Acid lactic.	Chloral hydrate.	Potassium bromide.
Alum (in powder with milk).	Glycerin phosphates.	Do. bisulphate.
	Hypophosphites.	Do. chlorate.
Ammonium muriate and potassium iodide (1 in 20) (as compresses).	Iodine.	Do. iodide.
	Iron.	Do. nitrate.
	Mercury.	Do. sulphas.
Antipyrin.	Porter.	Quinine tannate.
Beer.	Potassium acetate.	

External Remedies—

Breast pump.	Cupping.	Electricity.
Compression of the breast by bandage or strapping.		

Galactophyga or Galactafuge.—These are agents or measures which diminish the secretion of milk.

Hæmostatics and Styptics.—These are agents which arrest bleeding. The term hæmostatics is reserved for those which are administered internally, while styptics act locally. Styptics generally act mechanically by producing a clot which blocks up the mouth of the bleeding vessel or by causing the blood vessel to contract.

Acid acetic.	Creosote.	Formanilide.
Do. chromic.	Egg-shell ash.	Gil-i-makhtum.
Do. pyrogallic.	Ferri et ammonii sulphas.	Ichthyol.
Do. sulphuric dil.		Lead acetate.
Do. trichloracetic.	Do. et quininæ chloridum.	Manganese sulphate.
Adrenal extract.		Potassii succinas.
Alumen oleas.	Ferri perchloride.	Sangjirun.
Antipyrin.	Do. sulphate.	Silver nitrate.
Chloroform.	Do. subsulphate.	Stypticin.
Collodion styptic.	Ferropyrin.	
Creolin.	Ferrostypine.	

External Remedies—

Cauterization.	Cold (locally).	Heat (locally).
Spider's web.		

Hypnotics and Soporifics.—These are agents which have the property of producing normal sleep without disturbing the mental faculties or suspending consciousness to pain. In a broad sense they include narcotics and general anæsthetics. Narcotics also produce sleep, but they disturb normal relationship of the mental faculties to outside influence and cause loss of consciousness to pain; hypnotics, given in large doses, or pushed too far, produce toxic effects and act as poisons.

Hypnotics are divided into pure or direct hypnotics, indirect hypnotics and narco-hypnotics.

Pure or direct hypnotics.—They produce normal sleep, without any narcotic or dangerous cerebral symptoms.

Narco-hypnotics induce sleep by causing depression of the cerebral functions. In large doses they act as narcotics, suspend consciousness of pain and produce coma.

Indirect hypnotics produce sleep by removing or suppressing any cause which may lead to insomnia. These include non-narcotic analgesics which remove pain; respiratory stimulants which remove or relieve dyspnœa; pulmonary sedatives which relieve cough; motor depressants which relieve motor activity when in excess; and cardiac tonics which regulate the heart and antagonize cerebral hyperæmia.

Acetanilid (narcotic analgesic).
Aceto-phenone.
Acetol.
Akolethe.
Alcohol (narco-hypnotic).
Ammonium bromide.
Amyl nitrite (tertiary).
Do. valerianate.
Amylene hydrate (narco-hypnotic).
Do. chloral.
Anti arthrin.
Antinervin.
Antipyrin (narcotic analgesic).
Antispasmin.
Bromal hydras.
Bromides of potassium, sodium, lithium, zinc and magnesium (direct or pure hypnotics).
Bromidia.
Bromine salts.
Butyl chloral.
Camphor chloral.
Chloral hydrate (most efficient narco-hypnotic).
Do. ammonia.
Chloralamide.
Chloralose.
Chlorobrom.
Creosote.
Dionin.
Duboisin.
Ether.
Hedonal.
Heroin.
Hypno-acetin.
Hypnol.
Hypnone.
Kryofin.
Lactophenin.
Meta aldehyde.
Methylal.
Meuphrosine.
Morphinæ phthalas.
Paraldehyde.
Peronin.
Phenacetin (narcotic analgesic).
Phenalgin.
Rubidii ammoniæ bromidum.
Sulphonal.
Sulphonaldehyde.
Somnal.
Tetronal.
Trional.
Uralium.
Urethane.

Irritants and Counter-irritants.—Irritants are those agents and measures which, when applied to the skin, cause more or less vascular excitement. Counter-irritants.—These act by irritating the skin and producing reflex influence in the deeper parts. Irritants are divided into two classes, according to the intensity of their actions.

(*a*) **Rubefacients.**—These agents, when rubbed over the skin, irritate it and produce congestion and temporary redness, and thus subdue pain. If left too long in contact with the skin, they cause vesication or exudation between the cuticle and true skin, or destroy the tissue and form a slough (escharotic).

Acetone.
Acidum chromicum (caustic).
Alcohol.
Alsal.
Alumen exsiccatum (caustic).
Ammonia.
Amyloform.
Bromine.
Cadmium iodide.
Chloral hydrate.
Chlorine water.
Chloroform (when evaporation is prevented).

Ether (when evaporation is prevented).	Iodine.	Petroleum oil.
Eugallol.	Kerosine-oil.	Volatile oils.
Friction.	Lead iodide.	White of eggs (embrocation).
Hot water.	Liquor ammoniæ.	Zinc oleate.
	Mercury oleate.	

(*b*) **Vesicants—Epispastics—Blisters.**—These are local stimulants which produce inflammation of the skin and effusion of serum between the epidermis and derma. They are called pustulants when the effused product becomes converted into pus. They bring about absorption of inflammatory exudation products and restore suppressed discharges. Being depletory they cure internal troubles.

Vesicants—Pustulants.

Acid acetic glaciale.	Chlorine water.	Miloe trianthema.
Ammoniæ carbonas.	Heat.	Mylabris phalerata.
Boiling water.	Iodine.	Mylabris punctum.
Cantharidin.	Liquor ammoniæ fortis.	Silver nitrate.
Chloral hydrate.	Lytta violacea.	Tartar emetic.

Narcotics.—These are agents which, when taken into the system, at first excite the higher brain functions, increase the force of the mental faculties and improve other functions of the body. This is soon followed by narcosis or lowering of the functions of various portions of the brain. In medicinal doses these agents are of great therapeutic value, as they impair or lower morbidly acute perceptions, relieve spasm and pain, allay irritation, sooth nervous agitation, produce rest, and induce profound sleep. In large or toxic doses the sleep is followed by increasing stupor, coma, insensibility and death. Death may be due to paralysis of the medullary centres affecting or controlling respiration or other organic functions.

Acid carbolic.	Chloral hydrate (to soothe restlessness).	Orthoform.
Do. hydrobromic with quinine.	Chloroform (internally to soothe restlessness).	Phenacetin.
Alcohol.	Coca.	Potassium bromide (gives relief to whorry).
Ammonium chloride.	Cold sponging.	Potassium sulphate.
Amylene hydrate.	Creosote.	Resorcin (to calm general nervous excitability).
Antispasmin.	Cupro-hæmol.	
Antipyrin (to relieve nervous irritation).	Electricity.	Rest.
Argenti phosphas.	Ether.	Strontium bromide.
Bromide of potassium.	Hypophosphites.	Supra-renal gland.
Bromal hydrate.	Massage.	Solanin.
Calcii chloridum.	Musk (in restlessness due to uterine derangements).	Sweet spirit of nitre.
Carbonic acid gas.		Ural.
		Zinc phosphate.

Parasiticides.—These are agents which have the effects of destroying the parasites, both animal and vegetable, which infest the human body. They are used as lotions, oleates or ointment.

Those agents which have the power to destroy germs are known as germicides.

Ammoniated mercury.	Carbolic acid.	Gandhak tela.
Antinonin.	Creosote.	Hydrargyri zinco cyanidum.
Argentamine (germicide).	Cupri sulphas.	
Benzol.	Euphorine.	Iodine.
	Gallanol.	Losophan.

Mercuric chloride.
Do. nitrate.
Do. oxide.
Naphthalene tetra-chloride.
Petroleum.
Pyraloxin.
Sodii hyposulphis.
Sulphides.
Sulphur.
Do. iodide.
Sulphurous acid.

Germicides—Bactericide.

Acid acetic, dilute.
Do. cresylic.
Aminol.
Amyloform.
Chinolin.
Eugenoform.
Europhen.
Formaldelyde.
Gallabromol.
Glycerin.
Hydrargyri iodidum rubrum.
Do. oxycyanidum.
Ichthargen.
Iodophenin.
Izal.
Largen.
Liquor calcis iodinata.
Naphthol.
Nosophen.
Okal.
Phenalgin protargol.
Silver citrate.
Sodii fluosilicas.

Refrigerants.—These are drugs which allay thirst and give a sensation of coolness. There are local or external and internal refrigerants. The latter are cooling effervescing drinks, as ærated waters, fruit juices, drinks acidulated either with mineral or vegetable acids, ices, water if cold, diaphoretics, &c. External or local refrigerants are cooling evaporating lotions, and application of ice, &c.

Acid acetic, dilute.
Do. carbonic.
Do. citric.
Do. hydrochloric dilute.
Do. phosphoric dil.
Do. tartaric.
Bole armenian.
Gopichandan.
Guli armani.
Kaolin.
Liquor ammoniæ acetatis
Do. citratis.
Magnesium citrate.
Multani mattee.
Ochre.
Oxymel.
Potassium chlorate.
Do. citrate.
Potassium nitrate.
Do. tartrate acid.
Sange isam.
Sange-i-yahud.
Sodium borate.
Do. citrate.
Do. tartrate.
Spiritus etheris nitrosi.
Water-melon juice.

Restoratives.—These are agents which restore the lost tone by increasing constructive metabolism or metamorphosis. They include—

1. Nutritives or Foods.—These, when taken into the body, modify vital action by supplying material to renew some structure or to maintain some vital process.

Tonic Medicines.—These only modify and strengthen vital actions, but do not supply material for construction.

2. Hæmatics or Hœmatinics.—These medicinal agents act by increasing the amount of hæmatin in the blood and thus improve its quality by enriching the blood corpuscles.

Alcohol.
Beverages.
Butter.
Carniferin.
Cerebrin.
Eggs.
Fish liver.
Honey.
Ichthyocolla.
Isinglass.
Koumiss.
Meat preparations.
Milk.
Ol morrhuæ.
Oleum eulachon.
Do. squalæ.
Orchidin.
Ovi vitellus.
Phosphate of lime.
Red-bone marrow.
Sanguis bovinus exiccatus.
Sevum.
Sodium chloride.
Spermin.
Sugar of milk.
Supra-renal gland.
Thymus gland (extract).
Thyroid do. (do.)

Sedatives.—These are nearly allied to anodynes. The difference is not quite clear. The sedatives exert a soothing effect on the general system. They

impair the functional activity, depress mobility, diminish pain and lessen the sensibility of nerves in their normal condition. The idea of pain, however, may be entirely absent. In some cases the term 'sedative' is used more as a general term, and includes narcotics, anæsthetics and all the other drugs of a similar character. The sedatives are divided according to the part or organ which they affect. These are:—Cardiac sedatives, pulmonary sedatives, nervine sedatives, spinal sedatives, stomachic sedatives, vascular sedatives, urinary and vesical sedatives.

General and Local Sedatives—

Acetopyrin.
Acid hydrocyan. dil.
Aconite (local).
Ammonii bromidum.
Amylene hydrate.
Antikamnia.
Antispasmin.
Basicin.
Benzin.
Benzol.
Bismatose.
Bismuthi et ammoniæ citras liquor.
Do. carbonas.
Do. citras.
Do. subnitras.
Bismuthi oxidum.
Do. salicylas.
Borax.
Cerebrin.
Cerii oxalas.
Chloral amide.
Do. hydrate.
Copper bhashma.
Ferri bromidum.
Gold bhashm.
Ice bath.
Lithii bromidum.
Naphthol.
Do. cum camphora.
Opium (local).
Plumbi carbonas.
Plumbi oxidum.
Do. stearas.
Potassium bicarbonate.
Do. bromide.
Do. cyanide.
Rubidii et ammonii bromidum.
Samudraphen.
Sisa bhashma.
Stag's horn.
Strontii bromidum.
Tepid baths.
Thermal waters.
Turkish baths.

Cardiac Sedatives or Cardiac Depressants.—They lessen the force and frequency of the heart's action, in palpitation and over action of the heart, occurring in any local inflammation, fevers, and in strong and plethoric subjects.

Acetate of lead.
Ammonium fluoride.
Amyl nitrite.
Antifebrin.
Antipyrin.
Barium chloride.
Calcium bitartrate.
Chloroform.
Cold.
Erythral nitras.
Oxide of antimony.
Potassium bromide.
Do. nitrate.
Tartarated antimony.
Zinc cyanide.

Nervine Sedatives.—These exert a soothing influence on the nervous system, by lessening functional activity, depressing mobility and diminishing pain.

Æthyl bromide.
Ammonium bromide.
Amyl nitrite (tertiary).
Amylene hydrate.
Antipyrin.
Antispasmin.
Argenti chloride.
Arsenii bromidum.
Bromalin.
Bromide of potassium.
Bromides.
Bromipin.
Bromoform.
Bromopyrin.
Calcii bromidum.
Calcium and ammonium bromide.
Chloral hydrate.
Chlorobrom.
Chloroform.
Eserine.
Ether (narcotic).
Ethyl bromide.
Ethylene bromide.
Ferri bromidum.
Gallo bromol.
Gold bromide.
Heroin.
Hypnal.
Iso butyl nitrite.
Meta aldehyde.
Neurodin.
Paraldehyde.
Peronin.
Solanin.
Strontii bromidum.
Sulphonal.
Urethane.
Validol.
Zinc oxide.

Pulmonary Sedatives.—These are agents which diminish cough and dyspnœa. Some of them act directly by lowering or depressing the activities of the respiratory centre, and rendering respirations slow and shallow; others act by removing any obstruction or lessening irritation from the air passage; others again act indirectly by lessening local congestion or by depressing or lowering the functional activity of the end-organs of the vagus and other afferent nerves throughout the respiratory tract. Mucilaginous and saccharine substances soothe the local irritation and hence are used as vehicle for some pulmonary sedatives.

Alcohol.	Chloroform.	Heroin.
Ammonium fluoride.	Cold.	Lead acetate.
Amyl nitrite.	Dionin.	Peronin.
Carbolic acid.	Ether.	Potassium cyanide.
Chloral.	Ethyl iodide.	

Stomachic or Gastric Sedatives.—They lessen the irritability of the stomach, thereby restoring normal appetite.

Arsenic.	Carbolic acid.	Lactic acid.
Bicarbonate of potassium.	Cerium oxalate.	Lithium bromide.
	Cervus elaphus.	Potassium cyanide.
Do. sodium.	Chloralbacid.	Silver nitrate.
Bismuth carbonate.	Citrate of ammonium.	Do. oxide.
Do. citrate.	Creosote.	Solution of soda.
Do. oxide.	Dilute hydrocyanic acid.	Do. potash.
Do. subnitrate.		Strontium bromide.
Bromide of potassium.	Glycozone.	

Urinary Sedatives.—These medicinal agents if administered internally have a sedative action upon the whole of the urinary tract. They are first taken up by the urine, which being charged with them, brings them in contact with the whole mucous membrane of the urino-genital apparatus. Some of them act locally and their action is confined to the mucous surfaces of the urethra and the bladder. Alkalies and their salts act in diminishing the acidity of the secretion. Some of them act by rendering the urine antiseptic, and others act as astringents.

Acetate of lead (injection).	Bromine salts.	Lithium salts.
	Calcis saccharatus liquor.	Potassium salts.
Alum (injection).		Zinc chloride.
Argenti cyanidum.	Calcium carbonate.	
Boracic acid (injection).	Chloral (injection).	

Vesical Sedatives.—They lessen the irritability of the bladder, subdue pain and the desire for frequent micturition. Some of them act on the nerves and lessen their irritability, and others act on any foreign body as calculus; some again diminish the irritation by relieving chronic inflammation and others as antiseptics, thereby improving the quality of urine.

Astringents.	Eucalyptus oil.	Pareira.
Belladonna.	Fagonea arabica (local).	Prunus laurocerasus.
Buchu.	Hyoscyamus.	Sandal wood-oil.
Copaiba.	Mucilaginous drinks.	Stigmata maidis.
Cubebs.	Opium.	Witch hazel.

Sialogogues.—These are agents which increase the secretion and flow of saliva and buccal mucus. They are divided into topical and general sialogogues.

Topical sialogogues include anything taken into the mouth, but more especially some hot pungent substances which produce local irritation and thus act as sialogogues by reflex stimulation. General sialogogues include certain drugs like mercury, pilocarpine, &c., which during their elimination act indirectly through their systemic influence on the salivary glands or their secretory nerves.

Acids.	Chloroform.	Iridin.
Alkalies (topical).	Ether (topical).	Mercurials.
Antimonials.	Iodine compounds (general).	Potassium iodide.
Calomel.		Strontii iodidum.

Stimulants and Tonics.—The term, 'stimulant,' is used in various senses. It is applied to medicinal drugs such as alcohol, and its preparations, which, though true narcotics, are commonly termed stimulants. The term is also employed to designate any agent or agents which excite even briefly the normal activity, depressed or jaded function, or organic action of any organ or part of the system. Tonics or restoratives are allied to stimulants. They stimulate the vital functions and at the same time renovate and improve the tone of the organ or tissue on which they have a special action. The difference between the action of stimulants and that of tonics might be shown, by taking a jaded horse for illustration. If such an animal is whipped, it might be made to do some additional work, but thereby it becomes doubly exhausted. In this case the whip is of the nature of stimulant; but if the animal is given rest and properly fed, and then some work extracted out of it, the animal will give better work and remain strong. The food and rest are of the nature of tonics; hence stimulants are in their very nature depressants in their after-effects.

General or Diffusible Stimulants.—These are vascular stimulants affecting the whole general system. The sense of stimulation is prompt but transient, and at once felt through the whole body on account of their physical characters. Diffusible stimulants are generally highly volatile substances.

Alcohol.	Castor.	Resin (local).
Ambergris.	Cupri arsenis.	Sodii hypophosphis.
Ammonia gas.	Ethyl iodide.	Spermin.
Ammonium valerianate.	Moschus.	Spiritus etheris nitrosi.
Calcis hypophosphis.	Phosphorus.	

Local Stimulants.—They increase common sensibility short of producing pain. They act directly on the end organs of the sensory nerves in the skin; some act by stimulating the local circulation as in inflammation.

Alcohol.	Cupri sulphas.	Hydrargyrum iodidum.
Ammonia.	Ether.	Iodine.
Cadmii iodidum.	Faradization.	Lâl and kâlomalam.
Carbolic acid.	Ferri carbonas.	Mineral salts.
Chloroform.	Heat.	Sulphur.
Cold.	Hydrargyrum ammoniatum.	
Creosote.		

Cardiac and Vascular Stimulants and Tonics.—In depressed state of the heart they increase the force and frequency of the organ. Some act by a reflex influence excited through the nerves of the mouth and stomach; others stimulate the vasomotor centres. Given in medicinal doses they give tone to or stimulate the cardiac muscles by slowing and strengthening its contractions. In large

doses they produce irregular pulse. If pushed still further they cause death by syncope.

Alcohol (diluted).
Ambergris.
Ammonia (energetic action on the vasomotor centre).
Ammonium acetate.
Do. carbonate.
Do. citrate.
Amyl nitrite tertiary.
Anhalonine.
Aromatic spirit of ammonia.
Do. volatile oil.
Atropine.
Barii chloridum.
Barium sulphide.
Bos taurus.
Brandy.
Cardin.
Castor.
Carminatives.
Chloral hydrate.
Chlorine water.
Chloroform.
Counter-irritation.
Creatine.
Ether.
Erythrol tetranitrate.
Heat (locally).
Hypophosphites.
Isobutyl nitrate.
Lactyltropeine.
Nitroglycerin.
Orchitic extract and fluid.
Oxygen.
Phenalgin.
Phenamid.
Pyrodina.
Sodium benzoate.
Do. nitrate.
Do. pyrophosphate.
Do. salicylate.
Do. sulphate.
Spermine.
Spiritus etheris nitrosi.
Viverra civetta.

Cerebral Stimulants or Cerebral Excitants.—They increase the activity of the brain functions without leading to any subsequent depression or suspension of its functions. They act directly upon the grey matter of the brain or by a reflex action by increasing the force and rapidity of the heart's action.

Alcohol.
Ammoniæ carbonas.
Do. citras.
Do. valerinas.
Amyl nitrite.
Aromatics.
Chloroform.
Erythrol tetra nitrate.
Ether.
Ethyl.
Isaprol.
Nitroglycerin.
Oxygen.
Safrol.

Hepatic Stimulants and Cholagogues.—Both these agents act upon the secretion of bile; they increase the function of the liver cells and the quantity of bile formed. They carry off the bile and thus act upon the liver to secrete more. Some hepatic stimulants increase the glycogenic function of the liver, and others stimulate the production of urea. Cholagogues remove the bile thus secreted from the duodenum and prevent its re-absorption into the portal circulation.

Acid nitro-hydrochloric.
Ammonii benzoas.
Ammonium chloride (increases urea).
Amyl nitrite (increase of glycogen).
Antimony sulphuretum (hepatic stimulant, increases urea).
Arsenic preparations (hepatic stimulant, increases urea).
Baptiscin.
Calomel.
Ferri picras.
Honey.
Iridin (hepatic stimulant).
Iron (increases urea).
Mercury bichloride (hepatic stimulant).
Mercury and chalk (cholagogue).
Mineral acids (hepatic stimulant).
Phosphorus (increases urea).
Potassium tartrate.
Do. sulphas (cholagogue).
Sodii benzoas (hepatic stimulant).
Do. magnesii sulphas.
Do. pyrophosphas (hepatic stimulant).
Do. sulphas (cholagogue).
Do. sulpho carbolas (hepatic stimulant).
Sodium bicarbonate (increases glycogen).
Do. salicylate (hepatic stimulant).

Renal Stimulants.—These agents include the diuretic group. They increase the quantity of urine and frequency of micturition.

Respiratory Stimulants.—These agents increase the functional activity of the respiratory centre. They act by increasing the frequency of the respirations and also by deepening the breathing; some of them stimulate the vagus tract, others as electricity act as direct respiratory stimulant when applied directly to the nerve trunk or to the respiratory muscles. Some again act by stimulating the end organs of the vagus.

Alcohol.	Chloralamide.
Antikamnia.	Ether.

Spinal Stimulants and Motor Excitants.—These agents increase the functional activity of the spinal cord and other parts of the motor apparatus. They act by increasing or disturbing the motor power, and increase the reflex excitability. When given in large doses they give rise to tetanic convulsions, ultimately leading to motor paralysis from over stimulation. Some of the group though sedatives at first, if given in large doses, give rise to convulsions. Many of them stimulate the cerebral motor convolutions, others the respiratory centre in the medulla, others again the motor nerve trunks, while a few the end organs of the motor nerves.

Alcohol.	Ether.	Potassii permanganas.
Bromoform.	Phosphate of lime.	Pyridine.
Chloroform.	Phosphorus.	

Gastric Tonics.—These agents, otherwise known as stomachics, increase appetite and promote digestion (gastric). Their action varies; some increase the gastric juice by stimulating its production; others increase the supply of blood to the stomach; a third group and a majority of them act by stimulating the activity of the nerves and muscles supplying the stomach. When the gastric juice is deficient in quantity or quality other remedial agents containing active digestive principles known as digestive ferments are given as adjuvants to aid digestion.

Acid lactic.	Ingluvin.	Pancreatin.
Do. hydrochloric dil.	Lactyl tropeine.	Pepsine.
Erythol.	Orexine tannate.	
Globinol.	Papain.	

Acid arseniosum.	Acid sulphuric aromatic.	Punch lavana.
Do. nitro-hydrochloric dil.	Bismuth salts.	Rock salt.
	Calcium lactophosphate.	

Creatin.	Fel bovis.	Pancreatin.

Nervine Tonics.—These strengthen and give tone to the whole nervous system and thereby improve also the general system.

Acetanilid (when tired, makes one fresh again).	Alcohol (in fatigue from any cause).	Arsenious iodide.
	Ammonii hypophosphis.	Artificial serum (hypodermically).
Acidum arsenicosum.	Apetol.	Auri et sodii chloridum.
Do. hypophosphorosum dilutum.	Argenti nitras.	Aurum bromide.
	Do. oxidum.	Bezoar.

Bromohæmol.
Bone marrow red.
Calamine.
Calcii hypophosphis.
Calcium carbonate 1 gr. with ferric phosphate 1 gr.
Celerina.
Cerebrin.
Cerii oxalas.
Cervus elaphus.
Counter-irritants.
Cupri sulphas.
Ethoxy caffeine.
Ferri arsenas.
Do. fluoridum.
Do. oxalas.
Do. phosphas.
Do. valerianas.
Gold bhasm.
Gold & sodium chloride.
Hypophosphate of soda, lime or iron.
Hypophosphites.
Mammary gland extract.
Mercury bichloride (in minute doses).
Musk.
Nickle sulphate.
Orchitic extract.
Orpiment.
Phosphorus preparations (in depression from over-work).
Potassii bromidum.
Do. hypophosphis.
Do. nitras.
Protargen.
Rest.
Rupa bhasm.
Silver salts.
Sodii arsenas.
Do. hypophosphis.
Spermine hydrochloride.
Spiritus ammoniæ aromaticus.
Splenic extract.
Sea bathing.
Syrupus calcii lactophosphatis.
Thyroid gland extract.
Zinc bromide.
Do. carbonate.
Do. oxide (as a sedative in nervous irritability from over-work or worry).
Do. phosphide.
Do. valerianate.

Formula—

Artificial Serum.—Sodii phosphatis, 3 drs. ; sodii sulphatis, 80 grs. ; sodii chloridi, 30 grs. ; acid carbolic, 5 grs. ; distilled water, 4 ozs. Mix. Dose—15 ms. hypodermically.

Strychninæ acetatis, 1 gr. ; acid acetic dilute, 20 ms. ; alcohol, 2 drs. ; distilled water, 6 drs. Mix. 10 drops thrice a day internally and avoid home influence and care.

Uterine Tonics.—These agents have a specific influence over the uterus ; some of them act as tonics, while others only as alteratives. The tonics are generally given internally, whereas the alteratives are used as topical applications to the uterus at the cervix.

Apiolum.
Astringents.
Iodine.
Potassium bromide.
Potassium chlorate.
Silver nitrate.

Urinary or Vesical Tonics.—These remedial agents are employed to give tone to the muscular fibres in the wall of the bladder and to increase its contractile power.

Bougies.
Potassium bromide.
Silver nitrate.

Blood Tonics, otherwise known as hæmatic tonics. These improve the quality of the blood by restoring principles in which it may be deficient. They are also known as hæmatinics. They are chiefly useful in adynamia, depressed vital powers, anæmia, convalescence, neurasthenia, &c.

Acid arsenious and its compounds.
Do. cacodylic.
Do. hydriodic.
Do. hypophosphorus dilute.
Do. lactic.
Acids mineral (give tone to the mucous membrane).
Alkalies (give tone to the liver and stomach).
Ammonii carbonas.
Animal oil.
Arsenic with iron and cod liver oil.
Aurum arsenate.
Blood defebrinated and desiccated.

Bone marrow.
Bynin.
Calcium lactophosphate with iron during convalescence and to prevent waste from suppurative discharges.
Calcium phosphate (in chronic discharges).
Carniferrin (as a tonic).
Cerebrin (as a brain tonic).
Cetrarin (as a hæmatinic).
Chalybeate waters (to improve the blood).
Coca wine (as nourishing).
Cod liver oil; vegetable oils; fats; fish-oils.
Copper arsenite.
Dyalised iron.
Fel bovis.
Ferri albuminates.
Do. chloride liquor (as a blood tonic).
Do. et magnesii sulphas.
Do. hypophosphis.
Do. succinate.
Do. valerianate.
Fermanglobin.
Ferratin.
Ferrogen.
Ferrohæmol (as a blood tonic).
Ferropyrin.
Ferrum redactum.
Glycero-phosphates.
Gold salts (blood tonic).
Hæmatin albumen.
Hæmatogen.
Hæmoferrum.
Hæmol (2 to 8 grs.).
Hæmo-gallol.
Hæmoglobin (these improve the blood by furnishing hæmatin).
Hydrogen peroxide.
Hypophosphites of lime, ammonia, soda, potash and iron.
Iron ammoniæ citrate.
Do. carbonate (in irritable stomach, with coated tongue).
Do. dialysed (as a blood tonic).
Manganese and its preparations.
Martis tincture.
Milk.
Morrhuol.
Nuclein.
Nux vomica with iron (as a blood tonic and restorative).
Orchitic extract (general tonic).
Oxygen inhalation (if much loss of blood).
Pancreatin (in feeble digestion).
Pepsin (in feeble digestion).
Phosphorus (as a tonic).
Rum and milk.
Saccharine fruits.
Sal alembroth.
Sanguis bovinum exciccatum (as a blood tonic).
Sea bathing (invigorating).
Sodium arsenate.
Do. chloride (6 per cent. transfusion) saline solution.
Do. glycero-phosphate.
Do. hypophosphite.
Somatose (highly nuitritious).
Spermine.
Do. carniferrum.
Spiritus vini gallici.
Thymus gland extract.
Turkish bath.
Vangeshwar rasa.
Wines.

General remedies.—Nourishing diet: Broths, eggs, milk, fish, exercise (outdoor), pure air.

Formulæ.—Syrupus ferri quininæ et strychninæ phosphatum.—Ferri sulphatis 5 drs.; sodii phosphatis, 6 drs.; quininæ sulphatis, 4 drs.; acid sulphuric dilute, 4 drs.; ammonia liquor, 4 drs.; strychnine, 6 grs.; acid phosphoric dilute, 12 ozs.; sugar, 12 ozs. Dose—1 dr.

Baby's Salt—Contains sodii phosph., 60; calc. phosph., 10; sod. bicarb., 30; ferri lactas, 5; sacch. lactas, 95. Dose—1 to 2 drs.

Mistura Ferri aromatica—Contains cinchona powdered, ½ oz.; calumba powdered, ½ oz.; cloves bruised ½ oz.; iron wire powdered, ½ oz. To this add

compound tincture of cardamoms 3 ozs., and tincture of orange peel ½ oz. Dose—2 drs.

Vascular Dilators.—These are agents which produce dilatation of the peripheral vessels, thereby relieving the heart, increasing circulation and equalizing blood pressure, and are used to relieve internal congestion and to relieve embarrassed condition of the heart.

Vascular Contractors.—These are agents which increase the contraction of the small vessels by acting upon their muscular fibres, thereby raising the blood pressure and lessening circulation, and are used to check hæmorrhage and reduce inflammation.

Ammonia.	Erythrol tetra nitrate.	Silver nitrate.
Ammonium acetate.	Ether.	Sodium nitrite.
Amyl nitrite.	Iron.	Sulphuric acid.
Antypyrin.	Lead salts.	Tartar emetic.
Barium salts.	Mannitol hexa nitrate.	Thyroid extract.
Camphor.	Nitro-glycerin.	Zinc salts.
Chloral.	Nitrous ether.	
Chloroform.	Potassium nitrite.	

THERAPEUTICS.

In the following pages are given various remedies employed in various diseases under their respective heads. In some cases one or two useful formulæ are also given.

Abdominal Plethora—Obesity—Corpulence—

Abdominal massage.
Acid hydriodic.
Alkalies.
Alkaline carbonates and alkaline mineral waters.
Ammonium bromide.
Exercise plenty.
Hydragogue and saline cathartics if due to portal congestion.
Iodides.
Iodoform causing wasting and anæmia by injuring the red corpuscles.
Iodol—2 grs. very effective.
Laxative fruits.
Liquor potassæ, ½ dr. in milk, is very efficient.
Potassium iodide.
Do. permanganate, ¼ to ½ gr. to relieve flatulence.
Saline mineral waters, chiefly purgative waters as Vichy.
Sodium chloride.
Do. taurocholate.
Sulphurous acid.
Thyroid extract—good results.
Vinegar.

Diet.—Clear soups or broths. Starchy food in very small quantities. Fresh eggs, green vegetables, puddings, biscuits taken in moderation; milk, alcohol, gluten in small quantities. Avoid salted meats, rich sauces, salad, vegetables as cucumber; peas, suran, plenty of fat, sugar, starch, &c.

External remedies.—Plenty of exercise; mind deeply engaged and fully occupied in active life.

Baths.—Hot water, vapour or Turkish baths. Free action of the bowels. To go to bed late and to rise early.

Abscess—Acute Abscess, Cold or Chronic Abscess, Suppuration, Boils.

Abrak paste—locally.
Acid boracic—as an antiseptic non-irritating dressing.
Acid carbolic:—Oil—as dressing or a solution (1 in 50) as injection after evacuation.
Acid salicylic—as dressing.
Alcohol—as stimulant in large abscesses.
Calcium phosphate in chronic and large abscesses—internally.
Carbon bisulphide.
Chlorine water—as lotion.
Cod liver oil in scrofula and in hectic fever.
Counter-irritation to surrounding parts to abort or hasten suppuration.
Creolin.
Creosote—as stimulant application to swellings and as dressing.
Di-iodoform.
Drainage tube if abscess is large and opened.
Ether—anæsthetic spray before opening.
Formaldehyde.
Hydrogen peroxide—externally as disinfectant solution 20 p.c. or as injection into the cavity.

Ice after opening.
Iodine as counter-irritant around the seat of disease. Tincture or solution for injection into the sac after opening large abscesses. Internally in scrofula to cause absorption of effused products.
Iodoform, as dusting powder or gauze into the cavity if the abscess is large and after opening it.
Iodol.
Lead lotion.
Mercury—various preparations as emplastrum, inunction, oleate and solution locally to diminish induration of old abscesses and to prevent formation of fresh abscesses.
Mercury bichloride as a wash or as irrigation.
Naphtalin.
Oleate of mercury and morphine—locally to cause absorption.
Phosphates of lime and soda—dose 1 to 2 grs.
Potassa fusa for opening abscesses.
Potassium permanganate—as antiseptic injection to correct fœtor.
Poultices of linseed to check or assist maturation; may be simple or besmeared with belladonna or laudanum.
Resorcin—locally as antiseptic in syphilitic cases 5 to 30 p.c. solution.
Silver nitrate with spiritus etheris nitrosi applied as a paint in early stage to adjacent surface to check inflammation.
Sodii fluosilicas.
Sodium and gold chloride in scrofulous abscesses.
Sozoidol salt.
Strontium iodide.
Sulphides of potassium, sodium, ammonium and calcium. In scrofulous abscesses to abort or to hasten maturation.
Vienna paste—locally.
Weaning the child in chronic mammary abscess.
Zinc chloride paste—locally.

External Remedies.

ASPIRATION—

Blisters or iodine as counter-irritants round the seat of disease.
Drainage tube.
Dressings—antiseptic gauze.
Guttapercha tissue.
Irrigation of the cavity after opening of very large abscesses.
Opening of abscess at once if deep or on the face, anus or breast to avert danger of its opening internally.
Pressure.

Acidity of the Stomach—

Acid carbolic internally, to arrest eructations.
Acid hydrochloric or acid phosphoric dilute before meals.
Acid sulphurous 5 to 30 ms., to avert acid fermentation of starchy foods.
Alkalies as sodium bicarbonate, ammonium carbonate after meals.
Ammonia—in headache due to acidity.
Bismuth oxychloridum with opium or morphine or with magnesia.
Calcium carbonate.
Calx sulphurata.
Cerii oxalas.
Charcoal biscuits.
Creosote.
Grey powder ½ gr. when acidity with clay-coloured stools.
Ichthalbin.
Lead acetate in pyrosis.
Lime water.
Liquor potassæ.
Manganese black oxide.
Papad khar.
Silver nitrate and silver oxide (very useful).
Tannalbin if there is abundant secretion of mucus.

Diet.—Use limejuice, aërated bread, or plain biscuits. Avoid pastry, vegetables, and fats.

Acne—A. simplex, A. indurata, A. vulgaris and A. rosaceæ.

Acid boric, locally—a weak solution.
Acid carbolic with glycerin and lard—as an application.
Acid hydrocyanic dilute—locally.
Acid hypophosphoricum.
Acid nitric—as lotion.
Acid salicylic—as ointment (1 in 8).
Adeps lanæ—locally.
Alkalies internally, also as alkaline lotions in acne with seborrhœa.
Ammonium chloride—internally.
Antipyrin with coca—internally in acne rosaceæ.
Aristol.
Arsenic with bromide and sulphide—internally in acne vulgaris.
Auri et arsenic bromide as liquor, or auri et mercury bromide—internally in chronic cases.
Beta naphthol—locally.
Bismuth oleate—locally in acne rosaceæ as a cosmetic.
Bismuth carbonate, zinc oleate and starch (used as a dusting powder).
Bromides with arsenic—internally in acne rosaceæ.
Calamina preparata as lotion locally.
Calcium sulphide. Internally in small doses if tendency to form pustules.
Cod liver oil.
Copper salts.
Creosote—locally in acne indurata.
Electricity to the nose—in acne rosaceæ.
Europhen.
Ferri et quininæ citras—internally.
Gaduol—internally in scrofulous cases.
Glycerin—locally and internally.
Hot water sponging.
Hydrargyri iodidum flavum—internally.
Hypophosphites—compound syrup—internally in acne indurata.
Ichthalbin—internally.
Ichthyol—externally and internally in acne rosaceæ.
Iodide of sulphur ointment—in all stages locally.
Iodol—locally.
Lead oleate—locally in acne indurata.
Liquor carbonis detergens—locally.
Do. hydrargyri pernitratis, locally, a single drop in each pustule.
Do. plumbi—locally.
Liquor potassæ locally in acne rosaceæ.
Magnesium sulphate internally or as a dusting powder in acne vulgaris, due to gastro-intestinal derangement.
Mercury bichloride liquor—as lotion or as a wash, or ointment on indurated pustules.
Do. bin iodide internally or as ointment.
Do. iodo chloride 5 grs. to 1 oz.—as an irritant application.
Do. nitrate solution, locally.
Do. oleate with oleate of zinc locally.
Naphtol.
Potassium bromide—internally useful in obstinate cases.
Potassium chlorate—internally.
Puncturing each papule with a lancet, followed by diluted ammoniated mercury or sulphur iodide ointment.
Resorcin with zinc oxide—locally applied to promote pealing of the skin in acne rosaceæ.
Sand friction.
Salines—internally.
Sapo mollis locally—followed by emollients.
Sodium bicarbonate lotion.
Do. salicylate—as lotion.
Sulphur—internally and as a lotion.
Do. iodide or hypochlorite 1 to 4 as ointment.
Thymol—ointment.
Zinc oxide, glycerin and gelatin and hot water as a dressing.

ADDISON'S DISEASE—

- Adrenal extract.
- Arsenic with cod liver oil.
- Glycerin.
- Iron chloride with glycerin and chloroform.
- Phosphorus.
- Skimmed milk.
- Sozoidol potassium.
- Suprarenal gland extract.

Adynamia AMONG BADLY FED TOWN-DWELLERS—

- Acid hydriodic—internally.
- ,, hydrochloric dilute.
- ,, nitric dilute.
- Calcium phosphate 1, calcium carbonate 1, and iron phosphate 1 when from overwork.
- Alcohol.
- Arsenic for swelled feet, of weakly persons and breathlessness from weak heart.
- Glycero-phosphate of sodium.
- Hæmogallol.
- Hydrogen peroxide.
- Hypophosphite of lime or soda in general debility.
- Iron and aloes pills.
- Iron sulphate 1 to 3 grs. and valerianate to promote appetite and digestion.
- Musk.
- Orchitic extract.
- Potassium chlorate.
- Rum and milk.
- Sea bathing.
- Solution of ammonium acetate.
- Spermine.
- Turkish bath.
- Urethane.
- Wine with ether, if sleeplessness, indigestion and stomach cramps.

Diet.—Sugar, fruits, vegetables, milk, fats, cod liver oil and other oils, wines, etc.

After Pains—

- Amyl nitrite.
- Antipyrin.
- Chloral hydrate, 20 grs., to stop the pains.
- Chloroform liniment with soap liniment locally to the abdomen.
- Copper arsenite.
- Dionine.
- Heroin with antikamnia.
- Hydrargyri bichloride as a douche.
- Injections, soothing, into the vagina.
- Potassii salicylas.
- Poultices, warm, over the hypogastrium.
- Sulphonal.

Albuminuria simple OR ALBUMINURIA OF PREGNANCY—

- Alkaline salts as citrates, acetates, to act as diuretics.
- Ammonium benzoate.
- Arsenic, to restrain albumen.
- Baths of warm water or hot air.
- Calcium benzoate.
- Cantharides tincture, 1 m.
- Chalybeate purgative water.
- Chloral 20 grs., to lessen albumen.
- Cod liver oil.
- Counter-irritation.
- Dry cupping.
- Fuchsine. Dose—1 to 3 grs. to arrest albumen.
- Glycerin phosphate
- Gold trichloride—in chronic cases.
- Hæmogallol.
- Ichthalbin.
- Incisions to relieve anasarca.
- Iron—reduced iron, chloride, iodide, &c.
- Lead acetate to diminish albumen.
- Lime water as a diuretic to restrain albumen.
- Mercury preparations, soluble, used with caution.
- Methylene blue.
- Milk cure.
- ,, sugar.
- Napthol.

Nitrite of amyl.
Nitro-glycerin 1 m. of 1 per cent. solution, to dilate peripheral vessels, to lessen renal congestion, and to relieve the heart.
Oxygen (compressed) as inhalation.
Ozonic ether.
Potassium salts as iodide, permanganate, bitartrate, sulphate (10 to 20 grs. as a diuretic), and sulphuret.
Saliformin.
Sodii benzoas.
Spiritus etheris nitrosi.
Strontium acetate. To be avoided if scanty urine.
,, Lactate should not be given if the urine is scanty or uræmia exists.
Tannalbin.
Theobromine.
Turkish baths to relieve kidneys of work; Virginia lithia waters.
Vegetable salts.
Warm water baths.
Water internally in large quantities.

Formula.—For simple albuminuria—Sodium phosphate, 2½ drs.; sodium chloride, 2½ drs.; sodium iodide, 2½ drs.; sodium bromide, 1 dr.; aqua, 16 ozs. Dose—4 drs.

Diet.—Liberal, freely assimilable: brain, butter, cream, eggs, fish, fowl, game, green vegetables, koumiss, milk skimmed or peptonized, starchy food, tea and coffee in moderation; whisky or red wine freely diluted.

Avoid sweets, strong soups, highly spiced foods, sauces, pickles and alcohol. Avoid worry, excitement and chill. Lead a quiet life, in a dry equable climate. Use hot air, vapour or Turkish baths. Take daily exercise short of fatigue.

Alcoholism—Alcoholic intoxication; drunkenness.

Ammonium acetate with sodium chloride as solution.
,, chloride ½ dr. restores faculties.
Aromatic spirit of ammonia with capsicum as a substitute for alcohol in full doses.
Arsenic liquor 1 m. To lessen morning distressing sickness.
Aurum and arsenic bromide—an excellent tonic.
Bismuth with hydrocyanic acid. To lessen gastric irritability.
Bitters with arsenic and capsicum. To overcome habit.
Bromides. To relieve wakefulness and to overcome habit.
Chloral hydrate. To quiet the nervous system, but not in old, worn-out drunkards and in weak heart.
Faradization.
Glycozone in chronic alcoholic gastric catarrh.
Gold and sodium chloride.
Ichthalbin.
Milk iced.
Phosphorus in chronic cases to tone the nervous system.
Potassii arsenitis liquor 2 ms. with cap sicum tincture 1 m. internally if vomiting.
Potassium bromide 1 dr. To remove horrors.
Sodium chloride internally.
Water, hot, before meals.
Zinc oxide to tone the nerves, to diminish gastric catarrh, to lessen tremor and to allay craving.

External remedies.—Cold affusion to the face and head.

Formula—Quieting mixture contains chloral hydrates, 1½ dr.; potassii bromide, 2 drs.; spiritus etheris compos., 2 drs.; tinctura valerianæ, 3 drs.; aqua, 6 ozs. Dose—4 to 12 drs. For insomnia.

Alopecia, A. Areata, Tinea Decalvans—The fungus microsporon audouini.

Acid, nitric, with olive oil as liniment.
Arsenic-liquor, 5 ms., internally.
Brushes with thick and long bristles.
Cantharidal ether with collodion or cantharides tincture 1 to 8 of castor oil to be well rubbed into roots of hair.
Depilatories—Quicklime 3, sodium sulphide 1, starch 4; or barium sulphide starch and zinc oxide; or yellow sulphide of arsenic, 20 grs., quicklime 4 drs. and starch 2 drs.
Frequent shaving.
Hair dyes as potassium permanganate, pyrogallic acid, black oxide of lead, black oxide of silver, &c.
Hydrogen dioxide to "blonde" the hair.
Oxygen gas locally applied to the affected part by means of a bag.
Sulphur iodide internally and locally.
Thyroid extract.

Amenorrhœa—

Ammonii chloridum if accompanied with headache.
Arsenic salts with iron, if due to inactivity of the ovaries.
Aurum salts if due to torpor of the ovaries.
Baths—mustard hip baths.
Cold sponging.
Electricity if inactivity of uterus or ovary.
Ice bag to the spine to the lower part.
Iron salts as ferri bicarbonas, ferri phosphas, ferri redactum, ferri ammonia citras, ferri et strychninæ citras.
Kasashida tela.
Manganese bin oxide.
Mercury bin iodide.
Oxalic acid, ¼ to ½ gr. is very useful.
Potassii permanganas, 2 grs., with powdered elm or liquorice.
Silver nitrate locally to the os at the time of expected discharge.

Anæmia—

Acids added to purgative salts act as tonic to the mucous membranes.
Adrenal and thymus extracts.
Arsenic with iron in pernicious cases or where iron alone does not agree.
Aurum and arsenic bromide.
Bitters.
Bone marrow extract.
Bullock's blood, fresh or defibrinated, by enema.
Calcium lacto phosphate or calcium phosphate for nursing women weakened by rapid child-bearing.
Calomel.
Cerebrinin.
Chalybeate waters after meals in flabby condition.
Cold sponging with care.
Ferri ammonia citrate, if tongue is coated.
Ferro pyrine.
Galvanization.
Glycerino phosphate.
Hæmoglobin.
Hypophosphates of calcium or sodium in nervous debility.
Hypophosphites.
Ichthalbin.
Iron chloride or carbonate in irritable stomach or vomiting. Given after food to improve digestion, and to supply hæmatin to the blood. Iron lactate in pernicious anæmia. Iron sulphate in pale or flabbly tongue.
Manganese and iron combined.
Mercury bichloride.
Naphtol beta.
Nuclein.
Orchitic extract.

Oxygen inhalation if due to loss of blood.
Pancreatin in feeble digestion.
Pepsin in feeble digestion.
Pepto mangan.
Phosphorus.
Red wines.
Restoratives.
Sea bathing.
Sodium arsenate.
,, hypophosphite.
Spermine.
Virol.

Diet.—Generous and nourishing, and digestible foods as soups, meat juice, bovril, fish, meat, poultry, game, eggs, starchy food, fruits, vegetables, malt preparations, milk, koumiss, cream, butter, ghee, celerina, tea, coffee, cocoa. In all cases use salt in large quantity. Avoid sauces, pickles, acids, highly spiced food. Take moderate outdoor exercise, have free and open pure air, tepid baths, sea-bathing; avoid constipation.

Formula—Acid phosph. dil., 1 fl. dr. ; liq. arsenicalis, 1 fl. dr. ; liq. strychnine, 1 fl. dr. ; syrup aurantii, 2 ozs. ; tinct. ferri perchloridi, 1 dr. Dose—2 drs. in a table spoonful of water after meals.

Aneurism—

Chloroform inhalation if great dyspnœa.
Diet.—Restricted, milk, light unstimulating food.
Electrolysis.
Galvano-puncture in deep aneurism.
Introduction of fine wire into the sac after ligaturing the main artery.
Ligation of the vassels.
Position recumbent.
Rest.

Angina catarrhalis—

Acid carbolic.
,, gallic.
,, hydrocyanic dilute.
Alum.
Ichthyol as gargle.
Iron chloride as gargle.
Potassium chlorate as gargle.
,, nitrate.
Silver nitrate.
Sodii nitris.
Sodium bicarbonate.
Sozoiodol sodium.

Angina pectoris—Preventive.—Immediate and constitutional treatment—

Acid hydrocyanic dilute.
Allyl tribromide.
Ammonia—an immediate treatment.
Ammonium bromide in anæmia.
Amyl nitrite. Dose—½ to 1 m. by the mouth, or 2 to 5 ms. as inhalation for immediate relief; unsafe in degeneration of cerebral vessels and in fatty heart.
Antikamnia with heroin.
Antipyrin hypodermically.
Arsenic, given in the interval, lessens or prevents paroxysms.
Brandy.
Chloral useful in pseudo angina pectoris.
Chloroform inhalation.
Dionine.
Erythrol tetra nitrate.
Ether for immediate relief to abort the attack.
Ether sulphuric to mitigate the paroxyms.
Glonoin $\frac{1}{100}$ m.
Hoffman's anodyne in syncope.
Isobutyl nitrite (liquid).
Nitrites of sodium and potassium.
Nitroglycerin.
Phosphorus.
Potassium bromide.
Poultices of hot bran to the heart.
Sodium iodide.
,, nitrite to prevent the return of symptoms.
Warmth to the extremities.
Zinc sulphate.

Appetite—Anorexia—

Acid nitro hydrochloric dilute after acute disease.
Bid lavana.
Bitters to stimulate appetite.
Fel bovini.
Ferri carbonas.
Fluoride of sodium or potassium to produce anorexia where the appetite is voracious (bulimia).
Orexine.
,, tannas.
Somatose salts.

Diet.—Savoury and well cooked.

Antrum Disease—

Boric acid—saturated solution as injection for after treatment.
Chloroform inhalation in acute catarrh.
Free drainage between the roots of second bicuspid and first molar. A gold tube fitted to the opening.
Hydrogen dioxide solution 1 to 18 of water as injection.
Iodine for injection.
Operation.—Remove the second molar and through the alveolus inject boric acid solution.
Zinc sulphate for injection.

Aphonia—*A. clericorum*, clergyman's sore throat, hoarseness of voice (hysterical, nervous, and paralytic).

Acid boracic lozenges to dissolve in the mouth in chronic laryngitis.
,, carbolic 1 to 50 solution as a spray.
,, nitric dilute 5 to 10 ms. internally when due to fatigue of the vocal cords or to indigestion.
,, sulphurous as a spray or inhalation or fumigation in clergyman's aphonia.
Alum—Internally as lozenges, or as a gargle or spray, in hoarseness and chronic coughs.
Ammonium chloride 10 grs., with strychnine $\frac{1}{60}$th gr. internally; also as inhalation or vapour in laryngeal catarrh.
Ammoniæ liquor as vapour inhalation or as vapour with water.
Ammoniæ with any of the volatile oils or camphor—as inhalation.
Ammonium chloride 2 drs. with cubebs tincture ½ dr. and water 4 ounces. Mix. Dose—4 drs. in laryngeal catarrh with aphonia.
Argenti nitras (1 in 500) solution as spray.
Astringent, stimulants as spray or lozenges in chronic cases.
Borax 5 grs. to dissolve in the mouth.
Chlorine vapour.
Chloroform inhalation.
Ether as inhalation.
Ethyl bromide for rapid anæsthesia in hysterical cases.
Galvanism over the thyroid glands in hysterical cases.
Glycerin of tannin—Locally in chronic throat inflammation.
Iodine as inhalation or locally to the fore part of the neck.
Iron perchloride with water (1 to 150) as inhalation.
Nitro glycerin—internally.
Potassium chlorate, saturated solution as a gargle and internally.
,, nitrate alone or with benzonic acid as lozenges. To suck or as cigarettes.
Sodii boras to dissolve in mouth.
Sodium chloride gargle or spray through an atomiser.
Sozoiodol with zinc oxide, and milk sugar in fine powder as an insufflation.
Steam inhalation with sedatives in acute cases.
Turkish baths.
Uranium nitrate as a spray in chronic cases.
Zinci sulphas (1 in 150) in catarrhal cases used as an inhalation or as solution locally.
Zinci valerianas locally to the cords.

Formula.—In catarrhal aphonia, potassium bromide, 2 drs. ; extract of aconite, 2 grs. ; tartar emetic, 1 gr. ; syrup of prunes, 12 drs. Dose—1 dr. internally. Or ammonia water, 4 drs. ; thymol, 15 grs. ; kaolin or carbonate of magnesia, 15 grs. ; water, 1 oz. For inhalation.

Aphthæ, stomatitis—Catarrhal stomatitis.

Acid boric alone as lotion 1 in 50 or with bismuth as a paste locally. Chromic locally to aphthos.

„ carbolic solution with potassium chlorate as a mouth wash and gargle or a concentrated solution with glycerin—locally as a caustic.

„ hydrochloric with tincture capsici and honey, locally. Applied to ulcers, mercurial or aphthous.

„ nitric—paint or internally in a diluted form.

„ nitro-hydrochloric dilute as gargle.

„ salicylic dissolved in alcohol. Locally (1 in 250) of water to ease the pain of catarrhal stomatitis.

„ sulphurous dilute as a spray or strong acid locally.

Actol.

Alcohol—Brandy and water as a lotion.

Alum burnt—locally applied in ulcerative form.

„ borax and honey gargle and wash.

Argenti nitras, locally.

Bezoar.

Borax with potassium chlorate or with honey or with glycerin. Locally in thrush in the mouth.

„ with thymol and alcohol as a wash.

Chlorine water, locally.

Glycerini boracis, locally.

Glycozone alone, or with tannin locally applied, is useful in ulcerative stomatitis.

Grey powder in dyspeptic ulcers to remove indigestion.

Honey.

Hydrogen dioxide.

Iodole.

Lime water as a mouth-wash in ulcerative form.

Magnesii carbonate internally.

Mel boracis, locally.

Bismuth salicylate and naphthol internally.

„ in aphthæ of nursing children locally.

Calx—Lime water and milk.

Chloride of lime.

Copper sulphate locally or solution as a paint on edges of the gums in ulcerative stomatitis.

Ferric chloride tincture with quinine (4 to 1) as application.

Mercury bichloride (1 in 1000) as gargle.

„ with prepared chalk internally to remove dyspepsia.

Ochre.

Potassium chlorate 10 grs. internally, also locally in ulcerative stomatitis of nursing women and in aphthæ.

„ bromide to relieve irritability.

„ iodide locally ; the solution grs. 4 to 1 ounce of water in syphilitic aphthæ.

„ permanganate.

Pyôktanin.

Salol.

Salvia.

Sanitas.

Silver nitrate a weak solution or locally the stick in thrush.

Soda bicarb. and rhubarb.

Sodii biboras and honey—locally.

„ salicylas with cocaine and water as gargle.

„ chloras, fluoridum, sozoidol, thiosulphate, sulphas as a wash (1 in 8) or gargle.

Sweet spirit of nitre.
Tonics.
Thymol.
Zinc acetate.
,, sulphate as wash and gargle.
,, sozoidol.

Apoplexy—

Acid hydrobromic with ergot.
Bromides (in large doses).
Diet (avoid stimulating food or drink as beer ; avoid excitement, over-eating).
Electricity (to promote absorption).
Galvanic current.
Hygiene (to avoid exposure to hot sun-heated rooms).

Diet —Avoid stimulating food and drink, exposure to hot sun, excitement of the mind, heated room and over-feeding.

Ascites—

Arsenic (if ascites is due to weak heart and to old age).
Diuretin when of renal or cardiac origin Diuretics may be tried.
Gold salts are useful in ascites due to hepatic disease or to induration of the abdominal organ.
Laparotomy and washing out of the abdominal cavity in cases of tubercular peritonitis with effusion.
Milk diet is useful by causing profuse alvine and urinary discharges.
Paracentesis abdominis (to relieve excessive effusion).

Asphyxia and Apnœa in new-born infant or in adult.

External remedies.—Remove the mucus out of nostrils and throat. Pass catheter into the trachea, and suck up any mucus left. Artificial respiration.

If due to foreign body in the air passages. Invert the patient, and strike upon the back. Use probang or a pair of curved forceps or a wire made into a hook to remove such foreign body ; draw out the tongue ; perform laryngotomy or tracheotomy as a last resort.

If due to drowning, remove the body from the water very rapidly and gently turn the face downwards, pull the tongue forward ; remove water or mucus from over the entrance of the wind-pipe ; expose the neck and chest, and give plenty of fresh air. Raise the body up, so that the water may have a free discharge from the mouth. Try artificial respiration. Restore the body temperature by applying ammonia near to the nostrils. Hot bricks to the body, hot ginger powder rubbed over both limbs, hot water bottles to the feet, and cold douche to the face and chest to excite respiration. In urgent cases forced in sufflation of air, oxygen, electricity, faradization or galvanism is very useful.

If due to chloroform, or to inhalation of noxious gases, such as gases of combustion or of illuminating gases as carbonic acid gas, carbon monoxide, acetalene, &c., the immediate remedies are :—Amyl nitrite inhalation or internally ; artificial respiration ; oxygen inhalation ; supra-renal extract, internally. Dash cold water on the face or slap the face. Inject hypodermically nitroglycerin $\frac{1}{10}$ gr. in the præcordia. Plenty of fresh air ; give digitalis, as a heart tonic ; senega with ammonia as stimulating expectorant, &c. If these measures fail, strip the body carefully and dry it, place it in warm bed with head and shoulders slightly raised, and employ the following methods :—

Marshall-Hall's method.—Place the patient flat on the face, use gentle intermittent pressure on the back, turn the body slowly and laterally, then on the face, and carefully bring into lateral posture, and repeat the process.

Schultse's method.—Place your thumbs on the anterior part of the chest, index fingers in the axilla, and other fingers on the back, the face being from you. Rotate (if the child) by swinging upward, so that the lower limbs turn towards you; again rotate to the original position. During forward rotation do not support the head or legs; then, bending upon or toward the abdomen, set up a forced expiration.

Silvester's method.—Imitate the act of respiration, pull the tongue forward to prevent obstruction to the entrance of air into the wind-pipe. Expand the chest by drawing the arms from the sides of the body and upwards until they almost meet over the head. Bring the arms down to the sides, causing the elbows to meet over the pit of the stomach, thus producing contraction of the chest, or in case of asphyxia, place the infant flat on the face, use intermittent pressure with your hands on the back gently and repeatedly, turn the body on the side or a little beyond, then on the face, repeat the process; or immerse the body alternately in hot and cold water. Throw cold water on the chest and face. After long submersion (drowning), recovery is very rare.

The signs of approaching death in hopeless cases.—These are eyes open; pupils dilated, conjunctivæ insensible to light; face placid; skin cold; frothy mucus round the nostrils and mouth; cessation of respiration and of heart-beats.

Signs of life in still hopeful cases.—A string tied about the finger causes the finger to swell and become red; a needle inserted into the flesh is tarnished by oxidation. Injection of ammonia under the skin forms a deep red spot. Atropine dropped into the eye dilates the pupils. With bright light the fingers look pink.

Signs of death having occurred.—A dark spot forms gradually on the white of the eye (from drying of the sclerotic), and the dark chloroid shows through. The fingers looking dead-white is a sure sign of death having taken place.

Asthenopia, myopia—

Atropine (to prevent, strain and control spasm of the accommodation).
Cold douche.
Hot compress.
Massage.
Glasses (proper number).
Rest to the eyes.
Strychnine.

Asthma—

Abrak (internally).
Acid hydriodic.
Do. sulphurous (by spray, inhalation or fumigation).
Alcohol with amyl nitrite (in spasmodic cases internally).
Alum.
Allyl tribromide.
Antimony tart (in children 1 gr. in 10 ozs. of water. Dose—1 dr.).
Ammonium benzoate.
Do. carbonate with tartar emetic.
Analgene.
Aniline sulphate.
Antipyrin (in bronchial asthma).
Antispasmin.
Arsenic as cigarettes, arsenic liquor internally or for hypodermic injection. It is inadmissible in organic disease of the lungs and heart.
Asaprol.
Borax.
Bromides (very useful in purely spasmodic cases).
Bromine salts.
Cerii oxalas.
Chamois leather (next to skin of the chest).

Chloral in spasmodic asthma to arrest the paroxysm (to be avoided in organic, cardiac or renal diseases).
Chloralamide.
Chloroform inhalation from warm water.
Counter-irritants to be repeated.
Creosote vapour.
Erythrol tetra nitrate.
Ether internally in full doses.
Ethyl iodide (5 ms. as inhalation to lessen subsequent attacks).
Ferri perchloride and oxide.
Galvanism (one pole beneath mastoid process and one pole to the epigastrium).
Icthalbin.
Iodine paint.
Iodoform.
Liquor ethyl nitritis.
Milk.
Musk.
Mercurials.
Nitroglycerin (should be avoided if there is heart-disease).
Paraldehyde. (Dose—40 to 60 ms. cuts short the attack.)
Pepsin in dyspepsia accompanying asthma.
Potassium bromide (in full doses in spasmodic asthma), iodide (in large doses) if due to acute bronchial catarrh, either alone or with lactucarium and chloral. Potassium iodide, sodium iodide and iodine ointment (locally). Potassium nitrate by inhalation of fumes or of paper impregnated with nitre to avert paroxysms.
Petroleum emulsion (½ dr. internally).
Resorcin to relieve dyspnœa.
Sambersing.
Silver nitrate (injected into the trachea or given internally).
Spermine (as tonic).
Sodium arsenite (internally as respiratory tonic). Sodium iodide, potassium iodide and iodine internally.
Spiritus etheris compositus. Dose—½ dr. is very useful in old people with emphysema of chronic bronchitis.
Strontium iodide.
Sulphonal.
Sulphur fumes (also given internally).
Sulphurated potassa.
Turkish baths.
Zinci oxidum with conium to diminish liability to catarrhs. Zinci sulphas to diminish the force and frequency of the attacks. Zinci valerianas.

Diet.—Heavy meal during the day, very little solid food in the evening.

External remedies.—Avoid exciting causes, indigestible food, wet, damp, sudden changes of temperature. Other remedies are :—Acetum bath, cold bathing, compressed air, electricity, out-door exercise, shower bath, sponging, Turkish bath.

Cigarettes made of the following :—Belladonna, coca leaves, dhatura leaves, eucalyptus, stramonium, tobacco, grindelia, lobelia, nitrate of potash and cannabis are very beneficial.

Inhalations.—The following are most important :—Acid sulphurous, allyl tribromide, ammonia liquor, amyl nitrite (to check spasms), chloroform, creosote vapour, erythrol tetra nitrate, ethyl iodide, nitrogen gas passed through a jar containing fluid extract of conium, calabar bean and belladonna, oxygen gas (in nervous asthma), potassium nitrate fumes, pyridine fumes or vapour.

Atheroma—Calcareous Degeneration—

Ammonium bromide or ammonium iodide, to promote absorption of deposit.
Arsenic alone or arsenic bromide if cerebral symptoms are present or when due to imperfect action of the kidneys.
Aurum and arsenic bromide, very efficient.
Barium chloride.
Cod liver oil with phosphates.
Hypophosphites or lactophosphates.

Balanitis—Phymosis—

Acid carbolic 5 per cent. solution locally or with olive oil as dressing.
,, tannic lotion.
Alcohol lotion.
Alum solution as warm lotion for injection.
Bismuth subgallate locally.
Circumcision in chronic cases.
Cleanliness very important.
Disinfectants as wash.
Glycerin as a preventive, locally.
Lime water, or lead water as lotion hydrargyri perchloridi 1 gr. in 1 oz. of lime water as a yellow wash, or as lotion if there is not much inflammation.
Liquor soda chlorinata solution locally.
Oil applied beneath the foreskin.
Sozoiodole as a dusting powder.
Vini aromatici as a wash.
Zinc oxide as a dusting powder.
,, sulphate with warm water as lotion or as injection.

Bed Sores—Preventive and Curative—

Acid sulphurous as lotion.
Air cushions as preventive.
Alcohol or whisky with starch and common salt as a wash.
Alum with white of egg or with tannic acid and spirit of camphor, locally.
Aristol.
Charcoal as dusting powder and as poultice.
Collodium locally.
Dusting powders.
Eau de cologne as application or wash to harden the skin.
Glycerin and starch or glycerin and tannic acid or glycerin cream, locally as prophylactic.
Hydrargyri perchloridum as soution with alcohol.
Ichthyol locally.
Iodine tincture as application.
Iodoform, ointment or as dusting powder.
Iodol.
Iron chloride as tonic.
Lead plaster.
Medicated poultices linseed or bran with cataplasm carbonis if fœtor, and with Balsam of Peru if sloughing.
Mercury bichloride (1 in 5000) as a wash, then iodoform or iodoformogen as a dusting powder.
Nitrous ether solution (1 in 25) locally.
Oleate of silver locally.
Oleum sanitas as a wash.
Posture—change of posture as a good preventive.
Pyoktannin.
Resin ointment.
Silver nitrate solution (1 in 25) as a paint or to be dusted over excoriations, but with unbroken skin.
Soap plaster after washing and after dusting with iodoform.
Sozoiodole potassium.
Styptic colloid.
Tannoform.
Thymol ointment.
Zinc oxide ointment.

Beriberi—

Amyl nitrite by inhalation in sudden cardiac attacks.
Anodyne liniment for cramps.
Arsenic as tonic.
Bleeding or venesection from the arm or from the jugular if failure of heart is imminent.
Exercise in the open air, mild and gentle.
Faradization.
Magnesium and sodium sulphate, to drain the tissues of fluid.
Methylene blue.
Nitroglycerin internally.
Petroleum internally.
Potassium bromide and aconite for cramps or excessive hyperæsthesia.
Silver nitrate as a nervine tonic.
Treak-ferook.

Diet—Nutritious: milk, eggs, wheaten flour. Avoid rice as being very bulky.

External remedies.—Bleeding if cardiac distress, dry air, massage after the muscular hyperæsthesia has subsided, oxygen inhalation if cardiac complication, puncture the skin if œdematous, rest in bed if cardiac complication, removal from the infected house or place.

Hygiene—Dry locality. Room sunny and well ventilated. Sea voyage is beneficial.

Biliousness—

Acid hydrochloric dilute with pepsin after meals; in dyspepsia.
,, nitro-hydrochloric—in hepatic torpor.
Alkalies—in indigestion due to rheumatism, to uric acid diathesis, or to obstruction to the flow of bile.
Alkaline mineral waters—in obstruction to the flow of bile or catarrh of bile ducts.
Ammonium chloride—in hepatic derangements, jaundice due to catarrh of bile ducts.
,, iodide 2 grs. with arsenic in catarrh of biliary ducts and in catarrh of duodenum.
Argenti oxidum.
Bismuth salts.
Blue pill 5 to 10 grs.
Bromides and chloral hydrate.
Calomel 2 to 10 grs., followed by Epsom salt if the tongue is coated or furred.
Carlsbad water.
Chloral hydrate.
Fel bovinum.
Ferri picras.
Friedrichshall water.
Gold chloride.
Grey powder.
Horse exercise.
Manganese in gouty or malarial jaundice.
Mercurial cathartics if there is excess or deficiency of bile.
Mercury bichloride if pale stools.
Mercury iodide (green) or oxide (yellow) $\frac{1}{60}$ gr. with sugar of milk in disorders of the alimentary canal.
Milk cure in obstinate cases.
Oxgall.
Salol.
Skimmed milk.
Sodium phosphate 10 grs. in headache due to catarrh of bile ducts.
Sodium tauro-cholate.

Bites and stings of venomous insects—

Acetate of lead solution, locally.
Acid boracic, locally.
,, carbolic, dilute to sponge the body in mosquito and scorpion bites.
Acid chromic—locally.
,, nitric—local application.
,, salicylic 1. with flexible collodion 19 for bites of insects to relieve the pain.

Alkalies—a weak solution locally to neutralize the formic acid.
Alum for scorpion bites.
Ammonia liquor—locally in stings of insects and also internally.
Ammonium carbonate, hypodermically for wounds by poison arrows.
Aqua calcis—locally for stings of bees and wasps.
Brandy or rum, hot—internally.
Calcium cholride solution injected into the wound.
Chloroform on lint locally.
Collodion with acid salicylic (10 to 1) locally.
Creolin.
Eau de cologne.
Ether locally.
Forceps, fine pointed, to remove remnant of the sting.
Hydrogen dioxide.
Ichthyol.
Mercury bichloride 1 in 1000 of flexible collodion locally.
Petroleum locally for scorpion bites and mosquitoes.
Potassa caustica or potassa fusa for dog bites.
Potassium permanganate—solution 15 per cent. round scorpion bites and insect stings.
Sanitas oil locally.
Silver nitrate locally to every sinuosity of the wound.
Soap in itching of mosquitoes.
Spirit ammon. aromat. for hypodermic injection.
Stimulants.
Sugar powdered—locally, to stings of wasps.
Treak-ferook.
Vinegar.

Bites—Snake-bites—Venom—

Acid carbolic—locally.
,, chromic—injection into the wound.
,, nitric—locally.
Alcohol internally.
Ammonite carbonaum hypodermically as nervine stimulant.
Anodynes as rectal injection.
Antimony potassio tart.
Antivenene as an antitoxin against the venom of serpents.
Calcium chloride solution for injection.
Camphorated oil for massage and friction.
Cauterization with nitrate of silver, chloride of zinc, carbolic acid, mineral acids, or actual cautery of live coal, hot iron.
Chlorinated lime solution locally.
Electricity.
Excision of the wound.
Gold chloride.
Ligature to the wound to prevent absorption.
Liquor ammoniæ 10 to 20 ms. internally every half hour in water or wine. Locally applied and hypodermically injected.
Potassium permanganate strong solution 1 in 6 locally, or injected subcutaneously in rattle-snake.
Silver nitrate—round the wound.
Spirit æmmoniæ aromaticus—internally.
Stimulants freely.
Whisky freely in rattle-snake.

Formula—Cataplasm.—Liquor ammoniæ mixed with flax seed meal or slippery elm-bark ; applied over the wound and surrounding small area.

Bladder—irritable—

Ammonium benzoate if due to enlarged prostate or phosphatic or alkaline urine.
Antipyrin, 20 grs., as rectal or vesical injection to relieve irritability.
Cantharis to relieve irritability in women without acute inflammation ; also in incontinence.
Carbonic acid for injection into the bladder. To be avoided if there is acute cystitis.

Blepharitis—Tinea Tarsi (eyelids)—

Alkaline lotions, warm, to remove the secretion.
Alum solution 8 grs. to 1 oz. of water as application.
Ammonium chloride solution locally.
Benzoin tincture locally.
Bismuth subnitrate and glycerin as application in ciliary and glandular affections.
Borax as a wash.
Cadmium sulphate.
Chloral hydrate—to remove scabs and crusts.
Copper sulphate solution well diluted as a wash.
Creolin, 2 per cent. solution locally.
Gaduol—as a tonic.
Glycerino-phosphates—as tonic.
Ichthalbin—alterative internally.
Ichthyol, locally.
Iron—tonic.
Largin.
Mercury and morphine.
,, nitrate or brown citron ointment very useful after removing the crusts.
Milk, locally as a wash.
Potassium chlorate as a wash.
Protargol.
Pulsatilla—internally and externally.
Pyoktannin, locally.
Silver nitrate—locally to the inside of the lids.
Sodium bicarbonate—lotion locally.
Tannin as dusting powder or solution, 5 grs. to 1 oz. as application.

Formula.—Application: Ungt. hydrarg. nit., 3 grs.; hydrarg. oxidi rubri, 3 grs.; acidi arseniosi, ½ gr.; almond oil, 10 ms.; vaseline, 1 dr. Ointment for the lids.

Boils, Anthrax, Furunculosis—

Acid carbolic solution 5 per cent. for dressing after opening the boil to prevent migration of cocci into the skin from the original boil; for subcutaneous injection 3 per cent. solution or undiluted; applied to a thread which is passed through centre of boil to cause absorption.
,, nitrate of mercury as abortive.
,, salicylic to destroy staphyloccus pyogenes—2 per cent. solution in alcohol as a wash or as a plaster of 50 per cent. strength or as ointment 2½ per cent. in vaseline to hasten necrotic process.
,, sulphuric aromatic to abort if tendency to boils, 10 to 15 ms. internally.
Alcohol with camphor and oil smeared over boils to absorb.
Alcohol with tincture benzoin locally to arrest boils.
Aluminium acetate solution (1 in 4 of water) to abort.
,, aceto-tartrate.
Alumnol.
Antiphlogistine.
Aqua calcis on a compress to promote suppuration.
Arsenic sulphide to prevent recurrence.
Boric acid 4 per cent. warm solution applied externally on compresses or by gentle friction or given internally. Dose—5 grs. in wafer. Useful to abort, to cure if matured and to prevent the formation of new ones.
Calcium hydrate—limewater—locally on compresses to the part.
Calcium chloride in solution locally or as fomentation to promote suppuration.
,, sulphide gr. ⅛ to ½ internally with sugar of milk.
Calx sulphurata $\frac{1}{10}$ to ½ internally.
Chloral hydrate 1 to 3 of glycerin as solution to cover the boil by a tampion of cotton.
Collodium application—to absorb during pustular or papular stage.

Counter-irritation by blisters or by iodine or by plasters surrounding the boils.
Egg-yellow, with lime locally applied.
Ferri perchloridi, locally.
Gaduol, internally as alterative.
Ichthalbin, internally.
Ichthol.
Ichthyol, topically.
Iodine tincture 1 to 3 of water. Locally to abort—hypodermically, also internally.
Iodoform—locally as dusting powder.
Iodoformogen.
Lead carbonate or subacetate as lotion, locally.
Mel with yolk of egg.
Mercury—iodide red or binodide, ointment or plaster as a prophylactic.
Mercury bichloride (1 in 1,000), locally as a wash.
Phosphate of sodium internally.
Phosphorus internally.
Potassa fusa as a caustic inserted into the openings.
Potassium chlorate as alterative with mineral acids, internally.
,, permanganate—lotion to hasten suppuration and to allay pain.
Poultices.
Pyoktannin.
Silver nitrate solution 40 grs. to 1oz. of nitrous ether as a paint over adjacent part to abort.
Sodii sulphis, locally.
Sodium phosphate, internally.
Strapping concentrically.
Subcutaneous incisions.
Sulphides in small doses—to hasten suppuration.
Sulphur, internally.
Sulphurated lime.
Sulphurous mineral waters—to abort mature or hard suppuration.

Formula.—Syrupus sulphatum contains sulphates of berberine, quinine, iron, potassium and sodium, with sulphuric acid, glycerin and spirit of chloroform. Dose—4 drs.

Application.—Acidi carbolici, 10 ms. ; acidi tannici, 40 grs. ; olei ricini, 1 dr. ; collodion, 1 dr.

Breath, fœtid or foul, due to disordered digestion or bad teeth—

Bismuth sulphophenylate, internally.
Carbolic acid diluted, as a mouth wash or gargle.
,, acid and glycerin lozenges.
Charcoal internally.
Chlorinated lime solution as a wash for the mouth.
Chlorine water solution as a wash.
Digestion to improve.
Eucalyptus oil as gargle, and lozenges.
Permanganate of potassium 1 gr. to 1 oz. of water as a wash and gargle.
Potassium chlorate and borax as lozenges.
Sanitas fluid as a gargle.
,, oil.
Teeth to clean.
Thymol solution as a mouth wash to remove foul odour of tobacco.

Bone Diseases—Caries—Necrosis—Exostosis—Nodes—Periostitis—

Acid carbolic lotion, disinfectant in caries.
,, phosphoric (1 in 8) locally.
Ammonium iodide internally in syphilitic periostitis.
Aristol in caries.
Aurum salts internally in syphiloma.
Calcium chloride in strumous diathesis.
,, carbonate and chloride in caries.
,, phosphates in rickets.
Cod-liver oil—in scrofula to promote constructive metamorphosis.

Di-iodoform in caries.
Excision in exostosis if necessary.
Ferrous iodide internally.
Gaduol in syphliloma.
Glycerino-phosphates internally.
Hypophosphites internally.
Incisions carried deeply in periostitis followed by compresses and bandage.
Iodine tincture—locally in scrofulous affections.
Iodoform plug in caries.
Iodole locally in caries.
Lacto-phosphates and lactates internally.
Mercury iodide, red, if caries is due to syphilis.
,, oleates and morphine locally in nodes.
,, or iodine ointment to be rubbed in exostosis.
Operation to remove sequestrum in necrosis or caries.
Phosphorus as phosphates of calcium and iron calcium lacto-phosphate in rickets.
Potassa fusa introduced into the fistula to convert it into large opening to permit the removal of necrosed or caried portion of the bone.
Potassium carbonate—concentrated solution locally in caries.
,, Iodide, with tincture of iodine internally and locally in syphitic nodes or caries.
Poultices locally in periostitis and necrosis.
Pyoktannin.
Resection of the devitalized bone in caries or necrosis with poultices, water dressings or stimulating lotions to aid the work of repair in caries or necrosis.
Sozoidol mercury or potassium for caries.
Stimulants.
Strontium iodide.
Sulphuric acid injection (1 to 2 of water) in carious bone and in cases of superficial caries.
Tonics—nutritious food.
Water dressings in necrosis.

Diet.—Nutritious—outdoor exercise—wines.

Formula.—Zinc sulphate, 15 ; cupri sulphate, 15 ; liq. plumbi acetatis, 20 ; vinegar, 200. The solution for injection into the sinuses.

Bright's Disease, Acute—

Antiphlogistic regimen.
Antipyrin.
Arsenic, arsen hæmol internally.
Avoid stimulants.
Cupping in lumbar region to relieve congestion.
Demulcents.
Diluents as milk.
Diuretics, as water, to increase the flow of urine, or those which act on the secreting cells of the kidneys.
Fuchsine. Dose—¼ to 1 gr.
Ichthalbin internally.
Ichthyol.
Leeches over the loins.
Liquor ferri ammonii acetatis.
Methylene blue.
Milk, skimmed or milk sugar.
Nitrous ether.
Potassium citrate, bromide, iodide sulphate, or bitartrate largely diluted, to relieve congestion, to prevent accumulation and to remove effete matters from urinary tubules.
Poultices very useful.
Rest.
Sodium salts, as chloride, benzoate, iodide, nitrite, and phosphate, very useful.
Strontium bromide and lactate very efficient in acute nephritis.
Tannalbin.
Vapour bath to increase the action of the skin.
Warm baths.

Formula.—Sodium iodide, 15 grs. ; sodium phosphate, 30 grs. ; sodium chloride, 90 grs. Dose—½ to 1 dr. in albuminuria dependent upon nephritis.

External remedies.—Baths—Turkish bath, hot or vapour bath to increase the action of the skin, counter-irritants, dry cupping, enema—warm water ; incisions to the œdematous swellings, local abstraction of blood, poultices over the loins, rest, turpentine stupes, warm baths.

Formula.—Potassii iodidi, 1 dr. ; tinct. digitalis, 2 drs. ; syrup scillæ, 4 drs. ; liquor ammon. acet., 8 drs. ; fl. ext. phytolacca, 2 drs. ; syrup sarzæ. comp., 4 ozs. As a tonic. Dose—2 drs. In Bright's disease.

2. Sodii chloridi, 180 grs. ; potassii chloridi, 9 grs. ; potassii sulphatis, 6 grs. ; potassii carbonatis, 3 grs. ; sodii carbonatis, 36 grs. ; magnesii carbonatis, 3 grs. ; calcii phosphatis precipitata, 30 grs. ; calcii carbonatis, 3 grs. ; ferri reductum, 27 grs. ; ferri carbonatis, 3 grs. Mix. Dose—3 to 6 grs. In chronic albuminuria.

Bright's Disease, Chronic—

Acid nitric with bichloride of mercury—internally.
Acid phosphoric dilute.
Alkaline salts—as sodium benzoate, potassium bicarbonate, potassium citrate—as diuretics.
Ammonio citrate of iron.
Ammonium acetate and benzoate.
Aqua calcis to lessen albumen.
Baths—warm, Turkish.
Bromides to relieve uræmic convulsions.
Cod liver oil.
Fomentation (hot) to the lumbar region.
Gold chloride with arsenic.
,, trichloride $\frac{1}{10}$ to $\frac{1}{15}$ gr. in interstitial nephritis.
Hæmogallol.
Hæmol.
Hydrargyri bichloridi, $\frac{1}{10}$ gr.
Iodo caffeine.
Iodo theobromine.
Iron to improve digestion and to correct anæmia.
Lead salts to lessen albumen.
Mineral waters.
Nitro-glycerin—to relieve heart and renal congestion, to dilate renal peripheral vessels and to lessen albumen.
Oxygen inhalation, to lessen albumen.
Ozonic ether.
Potassium bitartrate to remove effete matter.
,, iodide in syphilitic cases.
,, bromide—in uræmia.
Skimmed milk.
Urea.
Uropherin.
Water as diuretic in large doses to increase excretion of solids.

Diet.—Nourishing : milk, eggs, beans and peas ; avoid animal food.

Bronchiectasis—

Attend to general health.
Inhalations of chlorine solution, creosote or iodine vapour as stimulant and deodorizer to lessen fœtor.
Hypophosphites and phosphates to lessen expectoration and to relieve cough.
Terebene by inhalation.

Bronchitis, Acute—

Acetanilid, 4 grs., to arrest the attack.
Acid nitric dilute 10 ms. when the expectoration is free and copious.
Alkalies—to render the expectoration less viscid.
Ammonii acetate liquor as a sudorific, very useful for children.

Ammonium bromide—to relieve the chest pain.
Antimony potassi tartras—Dose $\frac{1}{12}$ gr. in plethoric subjects if cough is violent.
Chloroform by inhalation to relieve cough if violent.
Chlorophenol.
Creolin.
Dionin.
Emetics.
Eucalyptol.
Eucalyptus with belladonna as liniment locally.
Ethy iodide.
Heroin with antikamnia, very useful to relieve pain.
Iodoform—internally.
Koumyss.
Naphthalin.
Narcotics or sedatives.
Nauseant expectorants.
Oxygen inhalation if dyspnœa exists.
Peronin.
Pyridine as inhalation.
Sodium benzoate.

Diet.—Liquid, light food.

External remedies.—Cold bath to enable the patient to expel the mucus, dry cupping, heat by fomentation, dry or moist to the chest. Hygiene—fresh air, moisture with steam. Poultices, as mustard poultices, linseed and bran, jacket poultices, steam inhalation.

Bronchitis, Chronic—

Acid carbolic as inhalation, or 5 grs. to 1 oz. of cosminol as spray by an atomizer or 1 in 100 of steam combined with tincture of iodine, 5 per cent., as spray.
,, hydriodic internally.
,, hydrobromic as a sedative.
,, hydrocyanic dilute as antispasmodic.
,, nitro-muriatic as lotion, to sponge the chest.
Ammonii carbonas with tincture of senega and opium as stimulant expectorant if there be much depression and viscid mucus.
Ammonium chloride internally.
,, iodide internally—in chronic bronchitis.
Argentum nitrate solution, 10 grs. to 1 oz., locally, to the throat on a probang.
Arsenic liquor 2 ms. or arseniate of iodine with infusion of calumba internally or arsenic cigarettes when emphysema is present.
Bezoar.
Calcium phosphate. Dose—1 gr., to check profuse discharge.
Cerii oxalas, 5 gr. doses, relieves harassing cough and dyspnœa.
Chlorine water for inhalation or internally.
Cod-liver oil, as a sedative to the mucous membranes. It allays cough.
Creosote by inhalation and by stomach in old persons with profuse discharges.
Expectorants.
Ferri oxidum or ferri aromatica mixture to check profuse expectoration.
Helenin $\frac{1}{6}$ to $\frac{1}{3}$ gr.
Hydrogen dioxide solution (1 to 3) 1 dr. internally in dyspnœa.
Iodides—ammonium iodide with expectorants.
Iron, lead or zinc oxide to check profuse expectoration.
Koumiss.
Liquor ethyl nitritis.
Naphthalene 1 gr. with codea $\frac{1}{4}$ gr. to lessen expectoration and to alleviate cough.
Nitro-glycerin. Dose—4 ms. of 1 per cent. solution.
Nuclein as a tonic.

Petroleum—1 dr. internally.
Phosphate of lime, quinine and strychnine, to relieve cachexia.
Potassa sulphurata.
Potassæ liquor if the secretion is scanty and viscid.
Potassium iodide in advanced cases.
,, chlorate to promote expectoration.
,, hypophosphite as a tonic.
Sodium salts, as borates, hypophosphites, hyposulphites, iodides and nitrates in chronic cases to check fœtid expectoration.
Sulphur 5 to 10 grs. if there is abundant discharge.
Warburg's tincture to relieve cough.
Zinc sulphate internally to relieve cough.

External remedies.—Cupping; plasters; counter-irritants as ammonia water, almond oil and oleum rosemary; mustard poultices; tartar emetic ointment; liniments of croton oil, eucalyptus oil, turpentine or iodine, with oil of amber and olive oil.

Inhalations—

Acid carbolic 5 per cent. solution.
,, sulphurous gas as spray.
Alum by insufflation.
Ammonia as spray to lessen expectoration.
Ammonium chloride with eucalyptus oil as spray by an atomizer.
Arsenic cigarettes.
Chlorine water.
Chloroform.
Creosote with hot water.
Eau de cologne.
Ethyl iodide.
Formalin as a spray.
Hot water vapour.
Iodine with hot water.
Potassii nitratis paper as fumes.

Formula—Compound powder.—Talisady churana or confection. It contains talispatra, black pepper, long pepper, ginger, bamboo manna, cardamoms, cinnamon—equal parts, and sugar. Given in phthisis, chronic bronchitis, asthma and vesical catarrh.

Chronic Bronchitis among workers when due to cotton or flax particles of dust.

Mixture.—Ammoniæ chloridi, 5 grs.; ammoniæ carbonatis, 5 grs.; tinct. scillæ, 10 ms.; tinct. camph. co., 15 ms.; inf. senegæ, 1 oz.; syrup tolutani, 10 ms. Dose—1 oz.

Liniment.—Turpentine, 3 ozs.; acetic acid, 4 drs.; yolk of eggs, two; lemon oil, 1 dr.; rosemary water, 2 ozs.

Pills.—Ammoniacum, 15 grs.; ammoniæ carbonatis, 14 grs.; ipecacuanhæ, 4 grs.; morphiæ muriatis, 2 grs.; acacia—to make a pill mass. Dose—4 grs.

Sedative cough mixture.—1. Acid hydrocyan. dil., 1 m.; spt. chloroformi, 5 ms.; acid hydrobromic dilute, 6 ms.; syrup senegæ, 15 ms.; syrup scillæ, 15 ms.; syrup pruni virginianæ, 60 ms. Mix for one dose.

2. Ammon. muriate, 1 dr.; ext. euphorbiæ piluliferi fluid, 3 drs.; tinct. digitalis, 30 ms.; atropine sulph., $\frac{1}{60}$ gr.; chloroform, 15 ms.; syrup tolut., 1 oz.; syrup picis liquid, 1 oz.; aquæ, 4 ozs. Dose—1 oz.

Bronchitis, Capillary—

Alum as nauseating expectorant.
Ammonium carbonate if the child is prostrate and livid—often specific.
Ammonium carbonate with carbolic acid by inhalation if profuse expectoration.
,, iodide in small doses if catarrh.

Ammonium muriate 2 grs. with potassium chlorate 2 grs., to promote the secretion if dry.
Antimony, sulphurated, $\frac{1}{12}$ gr. with Dover's powder, if fever exists.
Cupping, wet or dry, over the back.
Emetics if suffocative symptoms exists.
Ethyl iodide by inhalation.
Hydrargyrum sub-sulphate as an emetic, or as nauseant expectorant.
Iodides to lessen viscidity of the expectoration.
Jacket poultices to the chest.
Steam inhalation with sedatives or carbolic acid.
Stimulants if prostration or in suffocative form.

Bronchocele.—Exophthalmic Goitre, Grave's or Basedow's disease.

Acid carbolic by injection.
,, fluoric 15 ms. to 1 oz. largely diluted.
,, hydriodic.
,, hydrofluoric ½ per cent. solution, 10 to 30 ms. as injection.
,, osmic.
,, salicylic.
Aconitum napellus.
Ammonium chloride internally; very efficient.
Analgesine.
Arsenic liquor 3 ms. increased gradually.
Aurum bromide $\frac{1}{8}$ gr. has been of benefit.
Blister the surface.
Bromide of potassium and iron in anæmic cases.
Bromine—to rub over the swelling.
Cadmium iodide internally and oleate locally.
Calcium chloride internally.
Chalybeate waters.
Counter-irritation.
Electricity.
Exalgine has been occasionally used with success.
Excision in extremely rare cases.
Ferric chloride solution for injections in hypertrophy of the gland.
Ferric bromide, fluoride or iodide.
Fluoride of ammonium solution 4 grs. to 1 oz.
Galvanism of the eyes and thyroid gland or of the pneumogastric or of the cervical sympathetic in simple cases.
Glycerino phosphates.
Iodalbacid or iodide of albumen.
Iodine tincture internally, and locally as ointment, or by injection into the parenchyma of the ordinary goitre, avoiding a vein, skin or the surrounding oreolar tissue.
Iodoform internally and externally.
Iodoformogen, iodopin or iodothyrine.
Iron with digitalis of great benefit.
Mercury iodide red, ointment 10 grs. to an ounce, locally, in simple hypertrophy to be used in front of hot fire or hot sun.
Pancreatin is successful.
Potassium bromide internally.
,, iodide internally and as ointment externally in simple hypertrophy.
Seton through the tumour has been of benefit.
Splenic extract very useful.
Spongia usta.
Thyroid extract 1 to 2 drs. has been of benefit.
Thyroidin-sicca.

Bronchorrhea—Chronic Bronchial Catarrh—

Acid carbolic 1 m. internally, or by spray 5 grs. to 1 oz., or as solution (1 in 10 of water) with alcohol 6, liquor ammonia 6, and water 10, for inhalation is of great benefit.
„ sulphurous gas by inhalation or in solution as spray.
Aldehyde as vapour.
Alum as a remote astringent.
Ammonium carbonas.
„ chloride as stimulant expectorant.
„ iodide with arsenic given internally to improve health.
Cod-liver oil as a restorative.
Creosote.
Eucalyptol.
Eucalyptus oil 2 ms. on sugar internally.
Gaduol.
Iodine tincture by inhalation or iodine liniment as counter-irritation to the front and back of the chest.
Iodoform internally 1 or 2 grs., or as a spray to check fœtid secretions.
Iodole.
Lead acetate 2 grs. as astringent, to lessen secretion when profuse.
Petroleum internally in capsules rapidly improves.
Phosphates as restorative.
Sanitas oil locally as spray.
Spinal ice bag, to lessen excessive secretion.
Spiritus etheris nitrosi internally.
Sulphurous acid gas by inhalation or in solution as spray.
Zinc oxide.

Bubo—

Acid carbolic by injection.
„ nitric application to indolent and unbroken bubo.
„ salicylic.
Antimony potassio tart. to reduce inflammation internally.
Aristol locally after operation.
Avoid free incision.
Beta naphthol.
Blisters followed by iodine application for absorption.
Calomel locally for indolent buboes, not healing after operation.
Chloral hydrate.
„ hydrate 25 per cent. solution locally.
Cleanliness.
Copper sulphate (1 in 150) as a wash.
Creolin.
Diaphtherin.
Europhen.
Hydrargyri oxidum rubrum.
„ perchloridum, locally the saturated solution, to form an eschar.
Ice to the swelling to relieve pain and lessen inflammation.
Ichthyol.
Iodine locally as counter-irritant to produce vesication round a bubo to relieve inflammation with rest and compress to cause absorption.
Iodoform locally; iodole.
Lead lotion as compresses.
Mercury if syphilitic buboes; calomel locally, if refusing to heal after opening.
Orthoform.
Peroxide of hydrogen as a wash and compress after opening.
Potassa fusa.
Potassio tartrate of iron. Internally or as lotion to phagedenic sore.
Potassium chlorate locally.
Poultice emollient.
Pressure by a sponge compress or by a brick.
Pyoktannin.
Resorcin.
Rest.
Silver nitrate locally to stimulate indolent buboes.
Sozoiodole potassium as a wash.
Sulphides to check suppuration.
Xeroform.

Diet.—Generous, with cod-liver oil.

Bruises—Sprains—

Acid acetic diluted, locally.
,, sulphurous as solution locally, constantly applied.
Alcohol with tannin and ether locally.
Alkalies as lotion.
Ammonium chloride in solution as lotion or for poultices.
Borax lotion.
Chloride of sodium with cold water.
Cold douche—cold affusion with a little salt.
Eau de cologne and water as lotion.
Heat applied by fomentation.
Hot foot-bath in ankle sprain.
Ice locally.
Lead lotion with opium locally.
Rest to the body, to the part by a roller bandage with splints.
Sodium bicarbonate solution as lotion.
,, chloride as dry fomentation.
Vinegar and common salt as lotion.
Whisky and water as lotion.
Zinc sulphate as lotion.

Burns and Scalds—Abrasions—Intertrigo.

A mixture of aristol 1, olive oil 2, vaseline 8, as an application in burns.
Acetanilid with triticum vulgare as dusting powder.
Acid boracic as saturated solution locally or as ointment (1 in 6) in intertrigo.
,, carbolic alone, or with morphia or with 1 in 30 of liniment calcis or with 1 in 6 of olive oil; locally applied on layers of cotton against foul discharges. It relieves pain and promotes healing.
,, picric with 1 in 16 of alcohol and 200 of water as a solution or as an application on strips of gauze in burns.
,, salicylic (1 in 8) of olive oil, in burns.
,, salicylic with cocaine (15 to 1) locally or as gauze.
Adeps preparatus.
Airol.
Alcohol lotion with ammonium chloride, tincture of arnica and camphor.
,, with tannic acid and ether.
Alkalies as lotion.
Alum or aluminium oleate as saturated solution.
Amyl hydride.
Antipyrin 20 per cent. solution as lotion or as ointment with boracic acid and iodoform.
Antisepticin.
Argenti nitras solution 10 grs. to 1 oz. in superficial burns.
Bismuth subgallate.
,, subnitrate, with tannic acid and olive oil, in intertrigo.
Borax lotion.
Brick clay as plaster.
Calamine cerate.
Calcis glyceritum, locally.
Calcium bisulphite.
Calomel ointment (1 in 8) in intertrigo.
Cantharis tincture (1 in 40) as an application on gauze.
Carbolic paste containing solution of carbolic acid, gum, and treacle—locally.
Carbonis ligni as a dusting powder.
Carron oil liniment in burns.
Chloral hydrate with glycerin (1 to 4) for application.
Chlorinated soda (liquor) with morphia locally.
Chloroform liniment, locally.
,, or ether locally to allay pain.
Cimolite as a dusting powder locally
Collodion flexible alone or with castor oil (1 to 2) locally on burns of the first degree.
Creosote lotion (1 in 200).
Creolin 5 per cent. as ointment.

Creta preparata with acetic acid as cream for application.
Di-iodoform.
Emol.
Eucalyptus oil.
Fel bovinum externally.
Ferri sulphatis lotion (1 to 200) locally.
Flour as a dusting powder to exclude air.
Fuller's earth as a dusting powder.
Glycerin with tragacanth locally.
Gutta percha as a protective.
Ichthyol as insufflation or ointment.
Iodine locally as discutient.
Iodoform, bismuth and boracic acid as dusting powder or as ointment with lanolin.
Do. gauze and cerate.
Iodoformogen.
Iodol.
Isinglass plaster.
Lead carbonate as white lead paint or with linseed oil as paste in burns.
Do. lotion with opium locally.
Magnesia locally.
Mercury bichloride as lotion (1 in 2,000) as a wash.
Ochre.
Oiled silk.
Photoxylion, like collodion, as a local application.
Plumbi acetas solution locally.
Potassium permanganate solution 2 to 5 per cent. as a wash.
Pyoktannin 1 per cent. as solution.
Resorcin 1 or 2 per cent. as solution.
Sangjirun paste locally.
Sanitas oil locally.
Soap plaster or soap suds.
Sodii hyposulphis 8, with carbolic acid 1, glycerin 4, and water 150, as lotion.
Sodium carbonate solution as lotion to relieve pain and promote healing.
Soluble glass.
Sozoidole potassium and starch 1 per cent., or sozoidole sodium and Venetian talc (1 in 10) as dusting powder.
Starch as dusting powder.
Table salt—solution—wash.
Tannoform for excoriations.
Thymol ointment.
Tragacanth with acacia pulv. and honey locally.
Zinc carbonate as dusting powder.
Do. ointment.
Do. stearate locally.

External remedies.—Absorbent dressing, bandaging, cotton wool to allay pain and to exclude air, cold douche, compressed sponge locally, compression, dry heat, elevation of the part, exclusion of air, hot fomentation, immerse the part in warm water, leeches, rest to the part, shampooing, strapping, warm bath to exclude air.

Cachexia—

Abrak.
Acid nitric, useful in mercurial cachexia or that following acute diseases or intemperance.
Arsen-hæmol or arsenic is a prompt remedy in malarial and cancerous cachexia.
Aurum in cancerous, mercurial and syphilitic cachexia, especially in the tertiary stage.
Calcium phosphate. In scrofulous and tubercular affections and in affections marked by malnutrition.
Chalybeate waters.
Cod-liver oil and fats to promote constructive metamorphosis in scrofula, tuberculosis, &c.
Cupro-hæmol.
Ferro-hæmol or ferrum, or ferri ammoniæ citrate in cachexia due to gastric ulcers, chlorosis, and in strumous, syphilitic, anæmic or splenic cachexia.
Glycerino-phosphates.
Iodine.

Manganese—as syrup manganesii iodide, with ferrous iodide in anæmic, strumous, syphilitic, malarial and cancerous cachexia.

Mercury. In syphilitic cachexia, but with caution.

Phosphates. In bone diseases, leucorrhœa, wasting, and bronchitic cachexia.

Potassium iodide. In syphilitic cachexia and that affecting bones and skin.

External remedies.—Baths, Turkish, if cachexia is due to mercury or lead, electricity, fresh air, hygiene, massage, wet pack.

Calculi (Biliary)—Gallstone—

Acid nitric as alterative and hepatic stimulants.

Do. nitro-hydrochloric, 3 ozs. in one gallon of water, as bath to relieve pain and promote expulsion.

Anæsthetics during the passage.

Bath containing nitro-muriatic acid, to relieve pain and to expel calculus.

Butter.

Carlsbad waters as prophylactic.

Chloral hydrate with morphine. To relieve spasms.

Chloroform internally, 20 ms., as a solvent. As inhalation given during spasm to relieve the pain.

Counter-irritants. To relieve pain during the paroxysm.

Emetic to aid expulsion.

Ether and turpentine, equal parts, as an anodyne, and as a solvent.

Ferri perchloride tincture internally.

Do. succinas after meals; contains large proportion of nascent oxygen as resolvent and prophylactic.

Glycerin in lithiasis.

Mercury iodide (green) with soap and manna as cholagogue.

Mineral water to be taken freely.

Olive oil in large doses.

Ox gall.

Sapo, efficient for their solution and breaking up.

Sodium carbonate with hot water internally in large quantity.

Do. oleate.

Do. phosphate 20 grs. in plenty of water, before each meal, as prophylactic.

Do. salicylate as prophylactic to increase the secretion of bile and to render it more watery.

Diet.—Avoid starchy food, fats, sugars, and alcohol. Exercise taken in moderation. Meat, eggs, fish, fruits and vegetables to be taken freely.

Calculi—Renal and Vesical—

Acid hippuric.

Do. hydrochloric dilute 3 ms. to 1 oz. of water as vesical injection in phosphatic gravel.

Do. nitric dilute, 1 m. to 1 oz., as injection to dissolve phosphates.

Alkalies—potassium and sodium salts to resolve uric acid calculi.

Alkaline mineral waters containing potassium salts, as Vichy waters.

Ammonium benzoate—to dissolve phosphatic calculi.

Ammonium biborate in 20-gr. doses with flax-seed tea in uric acid calculi, to relieve pain.

Anæsthetics to relieve pain.

Borocitrate of magnesium to dissolve uric acid calculi.

Calcium carbonate, very efficient.

Chloroform by inhalation.

Counter-irritants to relieve pain during its passage.

Formin, also hot fomentations to relieve pain and alleviate spasm.

Lead acetate, ½ gr. to 1 oz. of water, as injection into the bladder to prevent phosphatic calculi.
Lime water for injection into the bladder.
Lithium salts, as lithium citrate, to promote oxidation.
Lycetol.
Lysidine.
Magnesium boro citrate to prevent uric acid gravel.
Piperazine as solvent for uric acid deposit and urates.
Potassium boro tartrate, potassium carbonate, potassium citrate in large doses to dissolve uric acid crystals.
Poultices to the lumbar region to relieve pain.
Water distilled as drink in plenty.

Diet.—In moderation, restricted use of sugar, fats, alcohol; use freely green vegetables, milk, mineral waters; avoid animal food.

Cancer, Epithelioma—

Acid acetic dilute (1 to 3) ½ dr. as antiseptic injected into the growth in epithelial cancer.
Do. arsenious with starch locally applied as a caustic.
Do. carbolic, pure. Injection beneath or applied superficially to the sore tissues to allay pain, to retard growth and to remove fœtor.
Do. carbonic as injection to relieve pain.
Do. chromic, as escharotic, for cancer on the tongue to alleviate pain.
Do. lactic, picric, pyrogallic and salicylic as dusting powder or saturated solution, locally applied.
Do. sulphuric with asbestos (3 to 1) as paste.
Acids diluted internally in cancer of the stomach.
Alcohol, pure, with ether, as injection round the edges.
Aluminium sulphate, locally as a caustic and disinfectant.
Ammonium salts as carbonate and chloride. Internally.
Aniline.
Antimonii chloridum.
Argenti nitras, saturated solution for injection hypodermically, followed by a wash of sodium chloride (1 in 1,000).
Aristol locally.
Arsenic with iodine and glycerin or with orthoform applied locally to cause slough.
Do. iodide or arsenious acid given internally to lessen vomiting and diminishes pain in cancer of the stomach.
Aurum arsenate or gold and sodium chloride is of benefit if given internally.
Bismuth subnitrate to relieve vomiting and pain of gastric cancer.
Bromine alone or with alcohol (1 to 3) as an escharotic. 5 to 10 ms. injected into uterine cancer with relief.
Bromine chloride, $\frac{1}{16}$ of a drop alone or combined with other caustic to be followed by poultices.
Calcii lacto phosphate, calcium carbide, and calcium carbonate (calcined oyster shells) as powder applied locally to alleviate pain and arrest the growth of cancer.
Carbo lignum—charcoal poultices to lessen pain and fœtor.
Carbon bisulphide 2 to 4 grs. in almond oil, given internally in cancer of the stomach.
Caustic alkalies, strong solution, locally applied to dissolve cancer cells.

Caustic containing zinc chloride and flour (1 in 3) made into arrows and inserted into the tumour with relief.

Cautery paquelin. To scar the cervix.

Chloral hydrate 10 grs. internally as an anodyne to relieve pain.

Chloroform vapour as spray locally to the raw surface of cancer.

Cinnabar, creolin, creosote, locally.

Cupri nitras solution as lotion locally.

Do. sulphas as an escharotic.

Curette scraping often gives relief.

Di-iodoform.

Diptherin.

Electrolysis to relieve pain and to diminish the growth.

Enema of water alone in intestinal cancer to relieve pain and straining.

Ether sulph. as spray.

Europhen.

Ferri sulphas.

Gaduol.

Glycerino-phosphates internally.

Glycerin of tannin with glycerin of carbolic acid to remove fœtor and to relieve pain.

Ichthyol.

Iodine—strong tincture with iron chloride to check hæmorrhage and prevent extension of growth.

Iodoform inserted into the cavity of the cancer to relieve pain and to remove fœtor.

Iodol.

Lime, quicklime, as caustic.

Manganese and iron iodido syrup internally during cancerous cachexia.

Mercury acid nitrate and red sulphuret are used locally with benefit.

Do. bichloride in small doses internally retards the growth of gastric cancer; as solution for irrigation it is very useful.

Methylene blue, in cancer of the stomach to relieve pain and to lessen irritation.

Milk koumis internally.

Nervonin.

Opium to allay pain.

Orthoform.

Ozone locally applied as an antiseptic and anodyne in cancer of the tongue and throat.

Papain with thallin used locally and also internally.

Pepsin injection into the tumour or applied locally.

Plumbi nitras locally.

Potassa fusa as escharotic locally.

Potassium chlorate dusted as powder, or locally used as saturated solution to relieve pain and to remove fœtor.

Do. permanganate as lotion or wash.

Pyoktannin(methyl violet)as solution for injection into the growth to cause shrivelling up and its final disappearance.

Resorcin, with 3 to 4 of vaseline, locally as an ointment.

Sanitas oil.

Silica powdered with morphia (3 to 1) given internally.

Sodium bicarbonate as wash.

Do. ethylate as caustic.

Do. hyposulphite as solution to remove fœtor.

Sozoidol zinc applied locally.

Stypticin locally.

Thallin locally and internally.

Thyroid extract and its preparations have a curative action.

Toxins erysepelas and prodigiosus used as injection is more efficient in sarcoma than carcinoma.

Zinc chloride, 1 to 5 of flour, as an escharotic is inserted into the tumour.

Zinc sulphate as an escharotic. The powder is dusted over the tumour.

External remedies.—Amputation of cervix in cancer of os, actual cautery or Vienna paste, cold locally, electrolysis relieves pain and diminishes tumour, enemata—warm water to lessen pain in cancer of the rectum, poultices of charcoal, coffee or bread to relieve pain, pressure locally.

Formula.—Wheat flour 60, arsenic 1, cinnabar 5, sal ammoniac 5, corrosive sublimate ½, zinc chloride liquor 2½. Mix, make a paste and apply.

Zinci chloridi 1, auri chloridi 1, antimoni chloridi 1, bromini chloridi 1, starch 1, opium 1. Mix, make paste, and apply to the ulcerated surface.

Cancrum Oris—Gangrenous Stomatitis—Noma

Acid boric, citric or nitric—application to the surface.
Arsenic in small doses.
Cautery actual.
Chlorine water as a wash.
Corrosive sublimate solution (1 in 500).
Eucalyptus oil.
Excision of the gangrenous part.
Potassium chlorate in 5 gr. doses internally.
Do. permanganate as a wash.
Sodium borate.
Sozoidol sodium.

Carbuncle (anthrax)—

Acid carbolic and quinine internally.
Do. nitric—application after the carbuncle is first subject to drying and cleaning.
Alcohol, internally.
Ammonium acetate alone or ammonium carbonate with cinchona internally to support the system.
Bromine, to saturate the surface in anthrax.
Butyl chloral hydrate, to lessen pain.
Calx chlorinata locally.
Camphor phenol, locally as a protective covering, the centre of the growth to be left exposed.
Cauterization.
Collodion.
Creolin.
Di-iodoform.
Emplastrum plumbi.
Ether locally to form an eschar or internally.
Ethyl chloride, locally as anæsthetic.
Europhen.
Hydrogen peroxide.
Hydrargyri et ammonii chloridi locally.
Do. perchloride, drs. 2 of a 10 per cent. solution injected into the carbuncle.
Hypophosphites.
Ichthalbin internally.
Ichthyol locally.
Iodoform with oxide of zinc locally.
Iodoformogen.
Menthol plaster.
Methylene blue.
Phosphate of sodium or phosphorus internally.
Potassa fusa locally.
Poultices to relieve pain.
Resin ointment.
Resorcin.
Silver colloidal.
Sodium hyposulphate with chlorate of potash internally.
Solution of gutta percha locally.
Sulphurated lime.
Terebene as an antiseptic locally.
Turpentine locally.

External remedies.—Blister, cauterization by nitric or carbolic acid on the top of crucial incision, crucial incision with care, as it causes hæmorrhage, ether spray, excision, poultices, strapping concentrically, leaving the centre free, subcutaneous incisions.

Catalepsy—

Ammonia to smell.
Apomorphine, gr. $\frac{1}{10}$, during the paroxysm to restore consciousness.
Chloroform as inhalation.
Restoratives.
Sternutatories.
Tonics.
Turpentine oil as enema or as embrocation along the spine.

External remedies.—Ammonia to arouse consciousness, cold douche, faradism, stimulant application.

Catarrh—Nasal—Cold—Coryza—(Acute).

Acid, carbolic (1 to 100) as gargle (1 to 200) as a douche, or as inhalation when the catarrh tends to spread from nose to throat or chest.
Do. hydr-iodic.
Do. sulpho anilic.
Do. trichoracetic.
Aluminium aceto tartrate or aluminium tanno tartrate used as bougie with gelatine.
Ammonium carbonate 1 and opium $\frac{1}{2}$ internally to break up cold.
Ammonium chloride in children in thick secretion.
Antikamnia.
Antimony tart. $\frac{1}{10}$ to $\frac{1}{12}$ gr. in the early stage.
Antinosin.
Antipyrin.
Aristol.
Arsenic, as cigarettes, is used in sneezing, itching of nostrils or in frontal headache.
Do. iodide 3 grs. with sugar of milk 20 grs. and water 4 ozs. Internally—1 dr.
Bromides for headache.
Calomel as an application over the ulcerated part after cleaning the membrane.
Chloral 1 with castor oil 25 as an application to the schneiderian membrane to check the secretion of mucus and to lessen the irritation and headache.
Chloroform 20 with menthol 2 by inhalation as an antiseptic alternately through the nose and mouth.
Creolin.
Cupri sulphas as bougie with gelatine.
Diaphtherin.
Eucaine or holocaine hydrochlorate.
Glycerino phosphates internally.
Hydrargyri ammoniata with althœa powder as snuff.
Iodoformogen.
Migranin.
Mineral waters.
Naphthalin.
Nasophen.
Orthoform.
Peronin.
Potassium salts as bichromate solution locally 1 gr. to 10 grs. in 4 ozs. of water, or internally $\frac{1}{100}$ gr. if the discharge is tough and stringy and the nose tender. Bromide as solution (1 in 30) is applied locally to avert the attack. Chlorate as lozenges or 10 grs. in powder given in catarrh to abort cold; also used as a spray in nasal catarrh.
Pyoktannin.
Sanitas oil, salicin or sodium chloride each 1 dr. to a pint of hot water as cleansing solution.
Sea water as gargle.
Silver nitrate as a spray (1 in 150) as solution for nasal douche.
Sodium salts as bicarbonate dr. 1 to a pint of water as nasopharyngeal solution; hyposulphite (1 in 30) for irrigation; iodide 10 grs. with ferri iodide internally in specific catarrh; salicylate 10 grs. internally to relieve headache and coryza and to abort cold.
Sozoidol zinc.
Suprarenal gland.
Zinc sulphate as injection 1 gr. to 1 oz.

External remedies.—Benzoin as fumigation; burning turmeric as fumigation.

Inhalations.—Acid carbolic (1 to 200); ethyl iodide; formaldehyde; iodine tincture with carbolic acid (3 to 1) as inhalation from a steam bath through a sponge in daily attacks of cold with itching nose. Ammonia inhalation in painful inflammation of frontal bones or in the early stage. Turpentine inhalation. Oxygen inhalation in catarrh with emphysema. Sulphurous acid gas 2 to 8 drs. by inhalation, fumigation or spray.

By insufflation.—Alum exsiccatum powder, calomel, iodoform and tannin (1 to 3).

By spray.—Alum exsiccatum solution 3 to 20 grs., arsenic liquor 3 to 8 ms. in itching of the nose with frontal headache, borax 5 to 20 grs. (1 in 25), ferri ammonio sulphas, mercury bichloride $\frac{1}{16}$ to $\frac{1}{4}$ gr., potassium permanganate 5 grs. to a pint of water, acid carbolic 1 to 2 grs. to 1 dr., aristol $\frac{1}{2}$ to 1 oz. of cosminol.

Baths.—Footbath at bed-time, Turkish bath, cold sponge bath, mustard footbath.

Hygiene.—Cotton wool in both ears, hot beverages, hot lemonade, warmth to head and feet, nasal douche. Oil inunctions to the body and nose prevent taking cold. Hot sponges to the head in headache.

Formula.—As a spray: Acidi carbolici 15 ms., ext. hydrastis fluidum 1 dr., sodii bicarb. 1 dr., sodii biboras 1 dr., glycerin 8 drs., aqua camphora 8 ozs.—to the posterior nares.

As a wash: Soda bicarb. 7 grs., soda biborate 9 grs., soda benzoate 7 grs., salicylate 7 grs., eucalyptol 7 grs., thymol 7 grs., menthol 7 grs., gaultheria oil 7 ms. Mix. Add 1 ounce of water to form solution, to be used as a nasal wash for the nostrils.

Catarrh, Nasal—Chronic—

Acid benzoic vapour used as inhalation.
Do. carbolic 2 per cent. solution with iodine as spray or inhalation.
Do. salycylic 1 in 500 as a disinfectant injection.
Alum as a dusting powder.
Ammonia by inhalation when there is pain in the frontal and nasal bones.
Aurum chloride in syphilitic and mercurial subjects with fœtid discharge and sore nose.
Bismuth subnitrate with tannin or with calomel is used as insufflation.
Bromine vapour by inhalation into the nose with care.
Cod-liver oil in strumous subjects.
Di-iodoform.
Eucalyptol if profuse secretion.
Eucalyptus oil for inhalation.
Gaduol as alterative.
Glycozone as application.
Ichthalbin as alterative.
Ichthyol.
Iodine vapour by inhalation.
Iodide of iron if syphilitic catarrh.
Iodoform with tannin 1 to 3 as insufflation.
Iodole.
Potassium bichromate locally as solution 1 to 250 of water or internally $\frac{1}{100}$ gr. when the discharge is tough and stringy.
Do. permanganate solution 5 grs. to one pint of water as a deodorant wash.
Resorcin after cleaning the nose with boracic solution. A 2 to 4 per cent. solution of resorcin is used as spray.
Sea water as gargle into the naso-pharyngeal space.
Silver nitrate powder 10 grs. to 1 oz. of starch applied locally.

Sodium salts as bicarbonate 2 drs. to 20 ozs. of water or chloride 2 drs. in a pint of hot water used locally as solution for cleaning the nasal cavity.

Sodium phosphate 2 drs. to 1 pint of hot water as solution. Sulphur waters given internally.

Formula.—Acid carbolic 1 dr., borax 3 drs., sodium carbonate 3 drs., glycerin 6 drs., and water 6 ounces. Used as spray or nasal injection.

Cerebral Anæmia—

Alcohol.

Ammonia inhalation in sudden attacks.

Amyl nitrite in vasomotor spasm gives great relief in sudden attacks.

Arsenic with opium. In hypochondriasis and anæmia of the aged.

Aurum chloride in vertigo due to cerebral anæmia or in melancholia.

Cerebral excitants.

Chalybeate mineral waters.

Choral hydrate in small doses.

Counter-irritation to the spine in spinal anæmia.

Electricity through the head in confusion of mind due to imperfect nutrition.

Iron bromide alone 1 to 3 grs. or with potassium bromide.

Do. chloride tincture in general anæmia.

Nitroglycerin to dilate cerebral vessels.

Nux vomica as a tonic.

Phosphorus to supply nutriment for healthy brain action.

Rest of body and mind.

Stimulants.

Warm baths.

Zinc phosphide.

Cerebral Congestion—Apoplexy—

Acid hydrocyanic dil., internally.

Arsenic in sluggish venous circulation.

Bromides in full doses.

Calomel as a purgative.

Cathartics to lessen blood pressure.

Chloral hydrate when the temperature is high.

Galvanism to the cervical sympathetic.

Mistura magnesia et asafetida.

Sodium bromide with ergot extract.

Venesection is contra indicated if congestion is due to anæmia, aortic disease or to syncope.

Water—hot and cold, douche alternately to the head, warm water to the feet, or hot water packing round the legs.

Chancre—Chancroid—

Acid, carbolic, locally 2 grs. to 4 ozs. of water as a wet dressing or as an injection into the sore in chancroid.

Do. chromic as an escharotic.

Do. nitric, fuming (1 in 50) as a caustic dressing in chancroid.

Do. pyrogallic, locally as ointment.

Do. salicylic in phagedenic chancres.

Acid sulphuric strong as caustic.

Alkalies as caustic only round hard edges.

Aristol.

Bismuth benzoas locally in soft chancres.

Calomel as dry dressing or vapour locally.

Caustics as acid nitrate of mercury, bromine, hot iron, caustic alkalies, zinc chloride, locally applied only if the chancre is phagedenic.

Cauterization by thermo-cautery.
Chloral 3 grs. to 1 oz. of glycerin locally to relieve pain in chancroid.
Cleanliness—tepid water dressing.
Copper sulphate as lotion.
Di-iodoform.
Eucalyptol with iodoform.
Europhen as powder or ointment 1 to 20 parts or in oily solution 1 to 2 grs. for injection for syphilis.
Ferri et potassii tartras (1 to 6 of water), internally and locally applied.
Ferrous iodide internally in sloughing phagedina or simple chancroid.
Formaldehye.
Goulard's extract with opium and limejuice.
Hydrargyri salicylas.
Hydrogen peroxide solution used as a wash or if applied destroys the specific character.
Iodoform alone or with lycopodium equal parts or with zinc oxide (1 to 2) or with calomel (1 to 2) as antiseptic dusting powder allays pain and changes morbid action.
Iodol.
Kashisadi tel.
Kieselghur as a dusting powder.
Mercury lotion as black wash and yellow wash to erosions and ulcerated indurations.
Do. trichloride or biniodide internally or the red oxide as ointment.
Do. nitrate caustic solution applied with a glass rod in chancroid.
Monsel's solution.
Potassium chlorate as powder locally in chancroid.
Pyoktannin.
Resorcin.
Silver nitrate solution.
Sodii sulpho benzoas.
Sozoiodole mercury or zinc.
Tannoform alone as paste (1 in 6) of glycerin.
White iron as caustic in chancroid.
Zinc chloride with ferri potassio tart and water as lotion.
Do. oxide as dusting powder if the sore is angry-looking.

Formula.—Citric acid, hydrochloric acid, ironperchloride—equal parts—as solution (1 in 12) of water, for local application or iodoform 1, lycopodium 1, zinc oxide 2, calomel 1, as an antiseptic dry dressing, to relieve pain of chancre.

Chapped Hands and Lips—Fissured Nipples—Anus, &c.—

Acid boracic, locally.
Do. carbolic with glycerin 1 to 2 used locally.
Do. nitric as application after dilatation of the anus.
Do. sulphurous as solution or by fumigation.
Adeps lanæ to form a coating.
Alcohol locally.
Antisepsin.
Bismuth oleate and opium—for fissured nipples.
Do. oxy-iodidum locally.
Do. subnitrate and glycerin locally.
Calcium carbonate precipitata locally.
Carron oil locally.
Chloral hydrate locally 2 per cent. solution.
Chloroform locally, also by inhalation.
Collodion locally as protective covering for lips and nipples.
Creolin.
Cupri sulphate lotion or stick locally.
Dilatation forcible of the sphincter.
Glycerin with compound benzoin tincture (4 to 1) or with carbolic acid (2 to 1) locally.
Do. with starch, zinc oxide or eau de cologne (1 to 1) as a local application.

Gutta-percha solution locally.
Ichthyol externally.
Iodoform powder or ointment locally to relieve pain.
Iodoformogen.
Iodole with tannin locally.
Lanolin locally.
Lotio plumbi.
Lycopodium.
Menthol locally.
Mercury and benzoin ointment as suppository for the rectum.
Do. oxide ointment.
Potassa caustica.
Potassium bromide with glycerin locally.
Pyoktannin.
Salol with menthol (2 to 1) used locally to alleviate the pain.
Sambersing.
Silver nitrate solution, locally after application of cocaine 4 per cent. solution.
Solution gutta percha.
Sozoiodole sodium.
Sulphur internally as a mild purgative.
Tannin and glycerin locally as tents.
Tannoform.
Vaseline.
Zinc carbonate powder locally.
Do. oxide ointment with rose water or with starch and glycerin locally.

Chilblains—Frost Bite—Frozen Limbs—

Acid boracic locally.
Do. carbolic with iodine and tannin as ointment for application.
Do. nitric dilute lotion to remove sloughs.
Do. sulphurous with 1 to 3 of glycerin and water as an application, solution or fumigation.
Alumen with sodii biboratis as a wash.
Ammoniæ liquor with olive oil to rub.
Argenti nitras (1 in 50) as paint.
Avoid vaseline or other fatty substances.
Baths—foot-bath with muriatic acid.
Basilicon ointment with turpentine locally.
Bole armenian locally.
Chlorinated lime locally, to avoid fœtor.
Charcoal, to prevent fœtor.
Cod-liver oil and lime water locally if vesicles appear.
Copper sulphate solution, 4 grs. to 1 oz. locally.
Creolin.
Creosote ointment.
Eau de cologne with camphor locally with friction.
Electricity.
Elevated position.
Ferri chloride tincture as tonic.
Gaduol.
Hydrargyri ammoniæ chloride as ointment.
Iced cold water as dressing or ice to rub.
Ichthalbin, internally.
Ichthyol with lanolin as ointment.
Incision free, if much local tension.
Iodine as ointment or tincture to prevent itching.
Iodoform with conium and carbolic acid locally.
Lead subacetate as cerate or as lotion.
Limejuice locally with friction.
Liniment sapon. co. with paraffin locally.
Mercury bichloride (1 in 2,000) as a wash.
Sozoiodole sodium, potassium or zinc.
Sulphur fumes.
White of egg locally.

Chlorosis—Anæmia—Amenorrhœa—

Arsen-hæmol.
Arsenic and strychnine with iron, also occasional purgation and active exercise.
Bone marrow.
Calcium carbonate and hypophosphite.
Carbonated iron and manganese with milk sugar.
Chalybeate waters.
Cupri arsenas, cupro-hæmol.
Desiccated defibrinated blood emulsion given with milk, coffee, &c.
Gaduol.
Glycerino phosphate.
Gold arsenate.
Hæmo-gallol, hæmoglobin or hæmol as blood-maker.
Hypophosphites of calcium or sodium.
Ichthalbin internally as an alterative.
Iron, quinine and strychnine to avoid torpor of the system.
Lactophosphate of lime.
Manganese with saccharated carbonate of iron.
Nuclein.
Nux vomica with iron to stimulate blood-making organs.
Oils and fats as inunctions after baths.
Orexine.
Pakhanbhed.
Pancreatin, pepsin or pepto-mangan when digestion is deranged.
Phosphate of soda or potash.
Potassium bromide if nervousness exists.
Purgation, as magnesium carbonate and charcoal, to avoid putrid fœcal decomposition.
Sodium carbonate with lime carbonate.
Do. hyposulphite to check fœcal fermentation.
Somatose.
Sulphur where iron has failed.
Thymus extract.
Zinc hæmol, phosphide or valerianate.

Formula.—Neutral acetate of copper, ⅙ gr.; phosphate of sodium, ½ gr.; liquorice powder, 1 gr.; glycerin, 1 gr. Make pil. 1. Dose—One.

External remedies.—Active exercise; baths—sea-bathing, tepid baths; massage; galvanization central.

Cholera Asiatica—

Acid, carbolic, 2 ms., with bismuth or with iodine 2 ms. in water 1 oz. every hour as preventive.
Do. hydrocyanic dil.
Do. sulphuric or sulphuric aromatic 5 ms., alone or with opium as a prophylactic.
Do. sulphurous.
Do. trichloracetic—preventive.
Alcohol in small doses as cardiac stimulant.
Ammonia—intravenous injection.
Do. with turpentine and castor oil as liniment.
Animal broths.
Aqua ammonia by inhalation.
Argenti nitras solution (1 in 90) as injection into the rectum.
Arsenic in epidemic cases, alone or with opium, to stop vomiting and collapse.
Bismuth subnitrate alone or with ipecacuanha and opium, if green stools with mucus and blood.
Brandy and ice for vomiting.
Calomel in minute doses to allay vomiting and to avoid fermentative action.
Cantharidis tincture to combat collapse.
Carbo ligni. Dose—1 dr.
Champagne.
Chloral hydrate subcutaneously, alone or with morphia, in collapse.
Chloral with soap liniment (1 to 4) locally in cramp.

Chlorinated soda—solution internally with cinchona.
Chlorodyne 10 to 30 ms.
Chloroform with opium and brandy.
Dose—5 ms., to allay vomiting.
Cholera toxin as prophylactic.
Cold drinks—ice to suck.
Copper sulphate.
Creosote, alone or with opium to stop vomiting.
Ether injection, hypodermically.
Eucalyptus oil.
Hoffman's anodyne.
Hot drinks.
Hydrargyri bichloridi liquor internally.
Hydrogen peroxide with hot water to irrigate the stomach.
Irrigation of the intestines with soap and hot water.
Lead acetate with camphor and opium.
Liquor iodi terchloride internally.
Meat juice, fresh.
Mercury—grey powder in profuse vomiting and purging of offensive and colourless stools.
Musk internally.
Peptonized milk.
Potassium chlorate internally.
Do. permanganate.
Do. salts, as bromide, if due to nervous irritation or cerebral congestion.
Resorcin 1 gr. in 1 dr. of infusion of chamomile internally.
Rice water as congee.
Saccharin.
Saline purgatives as evacuants.
Sanitas fluid.
Sodii chloridum with sodii carbonas and water as injection into the vein.
Spirit ammoniæ aromaticus with spiritus etheris nitrosi.
Do. vini gallici.
Sulpho carbolates.
Sulphur to burn into the room.
Thymol.
Treak farook internally.
Zinc oxide with bismuth and pepsin.
Do. sulpho carbolate.

Formula.—Mixture: Salicylate of bismuth, 2 drs.; sulpho carbolate of zinc, 4 grs.; chalk mixture, 1 oz.; paregoric elixir, 2 drs. Dose—1 dr.

External remedies.—Counter-irritants to the pit of the stomach, dry packing, enema of warm milk, fresh air, friction, ice bag to the spine, injection of salines into the veins in collapse, heat to abdomen, legs and feet, irrigation of intestines with hot water and soap, intravenous injection, table salt and sodium carbonate, oxygen inhalation, rest absolute, sponging, transfusion of milk during collapse, turpentine stupes.

Cholera Infantum—

Acid, carbolic, alone or with bismuth.
Do. lactic 2 per cent. solution if green stools.
Arsenic, to check vomiting and during collapse.
Beef juice.
Bismuth preparations, as salicylate, gallate, and subnitrate.
Brandy or whisky, mixed with cloves, ginger, cinnamon, locally to the abdomen.
Do. with milk internally in collapse every hour.
Copper arsenite or sulphate.
Creolin.
Eudoxine.
Hot drinks, hot baths, if extremities are cold.
Ice to spine.
Ichthyol.
Iodoform and oil as rectal injection to relieve tenesmus.
Irrigation of bowels.
Lead acetate.
Liquor calcis.

Mercury—grey powder ⅙ gr. to check vomiting, and to check continuous, offensive and colourless stools.
Milk 4 ozs. with spirit of camphor 1 dr., in summer diarrhœa.
Peptenzyme.
Peptonized milk.
Potassium chlorate as enema.
Poultices to the abdomen.
Silver nitrate in the late stage.
Sodium phosphate.
Starch enema with opium in urgent cases.
Tannalbin.
Tannoform.
Tribromophenol.
Xeroform.
Zinc oxide with bismuth and pepsin.
Do. sulpho carbolate.

Diet.—No starchy food, only cow's milk with saccharum lactis or milk with lime water; animal broths. *Drinks.*—Ice water, weak tea.

Cholera Simplex—

Alcohol, iced.
Arsenic to stop vomiting or for collapse.
Brandy, iced.
Chloral with morphia hypodermically.
Chlorine water.
Chloroform.
Copper salts.
Creosote.
Hyposulphite.
Lead acetate at the commencement.
Paraform aldehyde.
Potassium chlorate.
Resorcin.
Salines at first, to precede the use of lead acetate.
Salol, salophen.
Silver nitrate.
Sodium salts as phosphate.
Zinc sulpho-carbolate.

Chordee—

Amyl nitrite.
Bromides.
Cantharis 1 m. of tincture as prophylactic.
Hot baths.
Tartar emetic to produce nausea.

Diet.—Low and plain. Avoid stimulants. Barley water, linseed tea.

Chorea—

Acetanilid in both mild and grave forms.
Acid hydrobromic dilute.
Ammonium valerianate.
Amyl nitrite.
Aniline sulph.
Antimonii et potassii tartras to produce nausea.
Antipyrin, 2-gr. doses, to combat the excitability of motor nerve centres.
Apetol.
Arsenic, Fowler's solution, 3 ms., is very useful in uncomplicated cases.
Aurum bromidum, ¼ gr., proved useful.
Bismuth valerianate.
Bromalin as sedative.
Bromides of iron, gold and potassium.
Bromipin.
Bromo-hæmol.
Calcium chloride—good in strumous subjects.
Chalybeate waters.
Chloralamide.
Chloral hydrate as a hypnotic induces quiet sleep and thus suspend spasms.
Chloroform inhalation alone as anæsthetic or chloroform with almond oil as liniment to the spine.
Cod-liver oil with soda hypophosphites is useful when there is low nutrition.

Copper salts as ammonio-sulphate till sickness is produced is useful.
Exalgin, 2 grs., with citrate of iron and quinine given after meals.
Gaduol.
Hæmol.
Iron sub-carbonate in anemic cases and at the time of puberty.
Do. valerianate.
Musk.
Nitroglycerin.
Pakhan bhed.
Phosphorus.
Potassium iodide.
Potassium salts as arsenite solution.
Salicin.
Salicylate.
Sedatives, to check motor spasms.
Silver salts as phosphate, nitrate and oxide.
Sodium salts as arsenate, salicylate.
Stanni chloridum. Dose—$\frac{1}{4}$ to $\frac{1}{2}$ gr.
Strontium salts as lactate and salicylate.
Sulphonal.
Sulphur.
Vangashwer rasa.
Zinc salts as ferro-cyanide, hæmol, iodide, oxide, sulphate.

External remedies.—Baths—sulphur bath. Blisters. Chloroform inhalation. Cold affusion to the spine and head. Electricity—constant current. Ether spray to the spine or ether inhalation. Galvanic chain round the neck and back. Hot pack.

Chyluria—Lymphorrhagia—

Acid, gallic, 1 dr., internally.
Ferric chloride tincture in large doses.
Fossil encrinite.
Hypophosphites syrup as emulsion with cod-liver oil.
Ichthyol.
Methylene blue.
Potassium iodide in large doses.
Purgatives, mild.
Rest—perfect rest.
Sodium salicylate.
Sodium benzoate 1 dr. internally.
Thymol 1 gr., if due to filariæ in the blood.

Diet.—Restriction about fatty food.

Climacteric Disorders—Menopause.

Acid carbolic with iodine and pot. iodid solution to swab the uterus.
Acid hydriodic.
Ammonia as inhalation.
Ammonium chloride lotion locally in headache.
Do. chloride internally in hepatic disorders.
Amyl nitrite in small doses when there is heat of the body followed by cold clammy skin.
Baths, warm, to promote free perspiration.
Change of air and scene.
Eau de cologne saturated with camphor for rubbing over the head in headache.
Eucalyptol in flushings.
Hot douche of salt and warm water.
Hydrastinine hydrochlorate.
Iron chloride for flutterings of the heart, fullness in the head, frequent flushes, cold and hot perspiration.
Methylene blue.
Nitrite of amyl in flushed face.
Nux vomica, opium and belladonna in fullness in the head, flushing or if due to hysteria.
Ovaria, dried.
Potassium bromide for dispondency, sleeplessness, irritability and flushing of the face, and heats and perspiration.
Do. iodide.
Raspail's eau sedative as lotion to painful part of the head in headache.
Sodium benzoate.
Stypticin as uterine sedative.
Thymol.
Zinc valerianate. For hysteric symptoms.

Colic—Intestinal, Flatulent Colic—Enteralgia—

Ammonia, in spasm of intestines in children due to bad feeding.
Amyl nitrite.
Antacid if acidity exists.
Antispasmin.
Arsenic in neuralgic or idiopathic enteralgia.
Calomel and opium if much vomiting.
Chloral hydrate and bromides in children.
Chloroform with opium internally in flatulent, hepatic and lead colics.
Dionin.
Enema, copious, of warm water.
Ether by inhalation or internally.
Fomentation, hot, to relieve the pain.
Lime water in children if colic is due to curdling milk.
Magnesium carbonate with asafetida and opium—nice carminative.
Milk.
Potassium bromide with anise or peppermint water more safe in colic in young children than opium.
Do. permanganate.
Soda chlorate, if due to decomposed bile.
Sodii chloridum.
Spirit etheris composita.

Colic—Lead—

Acid sulphuric dil. as a prophylactic.
Alum 10 grs., very useful as it converts the poison into innocuous sulphate, relieves pain and constipation, to be followed by castor oil.
Ammonii carbonate.
Baths, electro-chemical.
Bromides potassium or sodium as solvent.
Calomel with or without opium, followed by castor oil or by a turpentine enema affords relief.
Chloroform internally and as liniment.
Eggs.
Faradization locally.
Iodides in large doses.
Magnesium sulphate 1 dr. and potassium iodide 10 grs. It dissolves the lead in the tissues and causes elimination by intestinal mucus in an insoluble form and thus relieves constipation and removes the poison.
Milk.
Potassium tartrate, iodide and bromide.
Sodium chloride.
Strontium chloride.
Sulphur internally or as baths to aid elimination.
Sulphurated potassa.

Formula.—Ammonii carbonatis, 30 grs.; oleum carui, 1 m.; magnesii carbonatis, 1½ dr.; oleum mentha viridis, 1 m.; tinctura lavandulæ, 2 drs.; tinctura zingeiberis, 1 dr.; aqua, 6 ozs. Dose—4 drs.

Colic Nephritic or Renal Colic and Hepatic Colic—

Alkalies and alkaline mineral waters are useful.
Ammonium bromide.
Amyl valerianate.
Baths, warm, to relieve the pain.
Butyl chloral with alcohol, glycerin and water.
Calomel.
Carlsbad water.
Chloroform inhalation inferior to morphine injection, better than warm baths, &c.
Counter-irritation—flying blisters for renal colic.
Diluents as alkaline citrates or tartrates.
Ether by inhalation or as spray in hepatic colic relieves spasms.
Ethyl chloride as spray locally in colic.
Formin.
Friederichshall water.
Glycerin 4 to 6 drs. in alkaline water prevents recurrence in hepatic colic.

Hot applications.
Lysidin.
Mercurial alterative.
Neurodin.
Olive oil in full doses stops spasm of the ureters, used also in hepatic colic.
Piperazine to dissolve urates.
Riding.
Saline purgatives.
Sodium benzoate, oleate, salicylate.
Warm water bath relieves pain.

Diet.—Avoid starches, fats, fish, fowls.

Collapse—Exhaustion—Syncope—Shock—

Affusion of hot and cold water alternately.
Ammonia liquor diluted by intravenous injection in desperate cases of collapse due to fracture, laceration, &c.
Amyl nitrite.
Bath, mustard, with hot water.
Beef extract by the mouth.
Brandy by mouth hypodermically or by the rectum.
Chloral hydrate.
Counter-irritation to the nape of the neck, to the spine, or to the calves.
Cupping, dry, to the loins.
Electricity to the phrenic nerve.
Ether internally by inhalation or hypodermically.
Frictions with heat, camphorated alcohol, turpentine, chloroform, or with ammonia liniment.
Heat to the extremities or to the cardiac region.
Intravenous injection of sodium chloride with sodium sulphate water warm.
Nitroglycerin.
Oxygen inhalation.
Spirit ammon. aromat. with spirit etheris nitrosi.
Supra renal extract.
Transfusion.
Warm saline solution as subcutaneous injection.

Coma due to uræmia and narcotic poisoning—

Blisters to different parts of the body and repeated.
Cold douche with warm water alternately for stupor of drunkenness or of opium poisoning.
Dry champagne.
Ether subcutaneously.
Exercise persistently to walk about if due to opium poisoning.
Ice to the head.
Musk and camphor subcutaneously if due to diabetes.
Nitroglycerin.
Oxygen by inhalation.
Potassium bitartrate as a free purge in cases of coma from blood poisoning.
Poultices to the thighs, calves, chest, abdomen.
Purgatives.

Conjunctivitis—

Acid, boric, 4 to 5 per cent. as an antiseptic solution in diphtheritic form.
Do. carbolic solution 5 per cent. by spray of steam atomizer relieves pain and contracts vessels.
Do. carbonic gas locally applied in strumous ophthalmia to relieve pain and photophobia.
Alum, after acute symptoms have subsided, 3 grs. to 1 oz., used as a paint over the conjunctiva or the crystals in granular conjunctivitis.
Antimony tart. $\frac{1}{50}$ to $\frac{1}{30}$ gr. in strumous ophthalmia.
Argenti nitras solution (1 in 50) or the stick in granular conjunctivitis or in purulent or gonorrhœal ophthalmia.

Argentum colloidal (ointment).
Arsenic liquor internally in strumous ophthalmia.
Bath, hot or cold, locally.
Bismuth locally in chronic conjunctivitis to granular lids.
Blisters behind the ears in obstinate cases.
Boroglycerin (1 to 15).
Cadmium sulphate 2 grs. to 1 oz. of water as a collyrium or a wash.
Calomel to be dusted over palpebral conjunctiva.
Citron ointment locally.
Cold compress in purulent conjunctivitis.
Compresses, cold.
Copper salts, as acetate, aluminate, or sulphate, locally.
Creolin solution 1 per cent.
Glasses, smoked or blue.
Hygiene, rest of eyes.
Hydrargyri oxidum flavum or rubrum 1 in 60 of vaseline in phlyctenular conjunctivitis.
Iodine locally in strumous ophthalmia.
Iron pyrophosphate (1 in 25 of syrup). Dose—1 dr. after meals.
Do. sulphate 1 in 500 of water as collyrium.
Lead acetate liquor with zinc sulphate locally in phlyctenular conjunctivitis.
Mercury oleate with morphine as an application outside the lids in palpebral conjunctivitis.
Purgatives in the commencement of strumous ophthalmia.
Resorcin.
Sodium borate 5 grs. to 1 oz. as astringent lotion.
Sozoidole sodium.
Zinc salts as acetate or sulphate 2 grs. to 1 oz., a weak solution as astringent collyrium with ice.
Do. chloride (1 in 100) as collyrium in pustular, diptheritic or gonorrhœal conjunctivitis.

Constipation—

Alumina sulphas as a laxative.
Ammonium chloride in bilious disorders with constipation.
Arsenic 2 ms. of liquor, to overcome constipation.
Bezoar.
Bidlovana.
Brown bread.
Carlsbad waters; cathartics.
Chloral hydrate in chronic constipation.
Cod-liver oil in children.
Enemata of soap suds and salt with warm water.
Exercise—riding.
Ferrous sulphate with aloes.
Glycerin suppositories or enemata or clyster.
Honey.
Ichha bhedi rasa.
Lime saccharated solution.
Mineral waters as Pullna, Friedrichschall, Hunyadi.
Magnesium salts, for children, as carbonate oxide, or sulphate.
Massage.
Mercury in biliousness as calomel or grey powder.
Mineral waters containing sulphates.
Oxgall.
Potassium bisulphate.
Do. bitartrate.
Saline waters as Pullna, Hunyadi, Friedrichschall.
Soap suppositories.
Do. and water as enemata.
Sodium salts as chloride and phosphate.
Smoking a cigar after breakfast.
Sulphates in purgative doses.
Sulphur 10 grs. with confection of roses or confection of senna.
Sulphurous mineral waters.
Treacle.
Water, cold, drinking, before breakfast.

Diet.—Fish, meat, game, poultry, fresh vegetables, salads, celery, tomatos, spinach, French beans with salad oil or ghee or butter; onions, figs, prunes, plantains, unabs, dates, grapes, bananas, currants—as desserts. Tea, coffee, cocoa. Avoid nuts of all kinds. Milk in moderation. Take hot or cold water the first thing in the morning on leaving the bed and also at bed time. Warm clothing; tepid baths; massage over the abdomen every morning. Regular but gentle exercise.

Avoid habitual use of warm enemata; it increases torpor of the bowels.

Convalescence from serious diseases—

Acidum hydriodicum.
,, hypophosphorosum.
Alcohol before or with meals.
Arsenic preparations.
Baths—sea bathing, Turkish baths.
Bitters (vegetable) on weak stomach.
Bone-marrow extract.
Calcis liquor.
Calcium carbonate or phosphate.
Chalybeate waters.
Coca.
Cod-liver oil.
Cream.
Eucalyptus as tonic.
Fats as cod-liver oil.
Ferro hæmol.
Gaduol.
Glycerino-phosphates.
Hæmogallol with gentian is very useful
Hypophosphites and strychnine.
Ichthalbin to promote alimentation.
Iron salts.
Koumiss.
Levico waters.
Lime water.
Magnesium hypophosphite.
Morrhuol.
Nuclein.
Orchitic extract.
Orexine promotes assimilation and digestion.
Panch-nimb-churan.
Pancreatin promotes digestion.
Pepsin promotes digestion.
Phosphates.
Somatose; sarsaparilla.
Vinum xericum.

Diet.—Avoid scrupulously or guard against the use of food difficult of digestion. During convalescence from intestinal and gastric disorders strict moderation in diet should be enjoined.

Convulsions, Infantile—

Acid, phosphoric, dilute.
Alcohol—brandy arrests convulsions of dentition.
Allyl-tribromidum.
Amyl nitrite. Dose $\frac{1}{2}$ m. applied to the nostrils; with morphine internally.
Anæsthetics.
Bromides as potassium, sodium, ammonium, internally or by enema, when due to bathing.
Bromipin.
Calomel and jalap internally.
Castoreum.
Chloral hydrate alone or with chloroform or potassium bromide internally or as a suppository or as enema with starch or with musk.
Chloroform inhalation to prevent paroxysms, to arrest recurrence.
Diuretics.
Ether sulphuric as antispasmodic by inhalation or internally combined with musk and belladonna.
Glauber's salt.
Glycerin enema.
Grey powder.
Iron if due to albuminuria.
Meat juice.
Musk with camphor, chloral and yolk of egg with water for enema.
Narcotics.
Nitroglycerin.
Sodæ sulph. with senna as enema.
Zinc sulphate as emetic.
,, oxide with tonics or with calomel.

Diet.—Milk.

General directions.—Horizontal posture, fresh air, loose clothing; prevent biting of the tongue by putting a cork between the teeth.

External remedies.—Baths (warm) and vapour baths alternating with cold affusion to the head, mustard foot-bath, cold water to dash on to the face and head and to the chest and the abdomen, bleeding, cupping (dry) over the loins, finger into the pharynx, ice bag to the spine or to the head, lancing the gums if due to dentition, leeches to the temple if uræmic, sponge (hot) to the throat, tickling the throat, pressure on the carotid.

Corneal Opacities and Ulcerations—

Armenian bole.
Cadmium sulphate (1 in 25 of rose water) as collyrium to promote absorption.
Calomel and red precipitate by insufflation.
Iodine in collyria or internally in strumous cases.
Iodoform.
Mercury, as red iodide ointment to hasten absorption.
Do. yellow oxide with alum and vaseline.
Mercury bichloride, weak solution.
Oils as cod-liver oil, juniper oil, turpentine, oxgall with olive oil, as drops into the eye to hasten absorption.
Potassium iodide with potassium carbonate as ointment in long standing cases.
Silver nitrate as lotion.
Sodium chloride solution for injection under the conjunctiva when turbidity disappears.
Zinc oxide.

Corns and Warts—Excess of Epidermis—Condylomata—

Acid acetic, glacial. To remove the growths.
Do. acetic, strong 1, tincture iodine 1, to remove corns.
Do. arsenic or liquor arsenicalis internally, or arsenic as a caustic, as a paint over warts or as a dusting powder mixed with calomel and morphia.
Do. carbolic solution 2 per cent., as parenchymatous injection or with iodine and alcohol as an application.
Do. chromic solution (1 in 5) over the diseased growth by a glass rod. Avoid application over vascular growths.
Do. nitric 1 dr. to 1 pint of water as a wash for warts when due to syphilis.
Acid salicylic alone or with cannabis or with lactic acid and collodion as application to remove excess of epidermis or warts.
Do. trichloracetic.
Alcohol hypodermically injected for fatty growths.
Alkalies as saturated solution, used locally as caustic to warts.
Alum and white of eggs locally for soft corns.
Do. (burnt) with tannin over warts.
Do. 2, sabina 1 as dusting powder as caustic to warts.
Ammoniacum plaster with mercury.
Antimony chloride, locally.
Argenti nitras alone as solid application after soaking and paring of corns; or the solution as injection into the parenchyma of soft tissues; or with nitromuriatic acid as a caustic application.
Bromine as escharotic.

Calcii chloridum.
Do. hydras.
Calomel with zinc oxide as a dusting powder.
Copper oleate 20 per cent.
Cupro sulphas.
Emol.
Electricity.
Emplastrum plumbi or saponis as plaster on bunion.
Enucleation by dermal curette.
Ergot extract as injection.
Ferri sulphas and iodide as a paint.
Ferric chloride tincture and dilute hydrochloric acid, equal parts, locally to warts.
Heat from the hot end of a cigar to warts.
Hydrargyri formaldehyde.
Do. iodidi rubri.
Do. nitratis acidi with arsenic 5 per cent. as an ointment or plaster.
Do. perchloridi 15 grs. with collodion 1 oz. locally.
Iodine gr. 1 in 15 of alcohol with castor oil as a local application.
Do. tincture, with ferri sulphates liquor or ether as a paint.
Ligature.
Mercurial ointment with 5 per cent. of arsenic locally.
Paring the corn. The knife should work downwards to the apex of the corn and remove the central pressure on the tissues.
Plaster with a hole in the centre.
Plumbi iodidum, internally and externally as an ointment.
Potassa fusa as caustic.
Potassium bichromate or bromide with tannin locally.
Do. iodidi, internally.
Do. permanganate.
Poultices.
Pressure.
Resorcin as caustic.
Sodium ethylate liquor.
Strangulation by a horse hair or string for warts.
Sulphur.
Unna's plaster containing mercury 8 and arsenic 2.
Washing and paring the corn frequently.
Water, hot and cold, locally applied.
Zinc salts as chloride, iodide, nitrate or sulphate with sulphuric acid as a paste or as caustic.

Formula.—Acidi salicylici, 15 grs.; collodion flexible, 80 ms.; ext. cannabis Ind., 8 grs.; alcoholis, 15 ms.; etheris, 40 ms. Mix a paint for the corn.

Cough—

Acid carbolic 5 per cent. solution as a spray in a steam atomizer to allay cough from cold.
Do. hydrocyanic for nervous irritable cough of phthisis.
Alum 10 grs. to 1 oz. of water as a spray or gargle in chronic cough or internally in spasmodic cough.
Ammonium salicylate internally.
Antimony tart. wine internally.
Antispasmine.
Argenti nitras solution locally to fauces.
Avoid beer or porter.
Blue pill in bilious or gouty cough.
Butyl chloral hydrate for night coughs.
Carbonic acid gas as inhalation.
Chloral hydrate in convulsive and neurotic coughs. It procures sleep and relieves coughs.
Chloroform spirit, 1 dr. from the surface of hot water as inhalation is used in irritable cough of phthisis.
Do. with morphine and molasses as paint over throat in paroxysmal dry cough, or given internally.

Cod-liver oil in chronic coughs.
Creosote internally and externally.
Demulcents.
Dionin.
Gaduol.
Glycerin with lime juice as an emollient.
Do. with tannin as paint to the throat when chronically inflamed.
Glycerino phosphates.
Guaiacol.
Ichthalbin as assimilative.
Iodine tincture 10 ms. as inhalation from boiling water to relieve irritation of hoarse, wheezing cough of phthisis.
Iodoform.
Milk.
Peronin, like morphia or codea, very quieting in paroxysmal cough of phthisis.
Potassii hypophosphis.
Potassium bromide internally in irritative reflex coughs, either uterine, renal, &c., and as a gargle in coughs of phthisis.
Do. carbonate in dry cough.
Sambersing locally to the chest and internally.
Sanitas oil.
Zinc sulphate or valerianate in hysterical cough.

Formula.—Pot. cyanide, 3 grs.; ext. grindelia, 1 oz.; syrup tolutani, 1 oz.; syrup scillæ, 1 oz. Dose—1 dr.

Coxalgia—

Acid sulphuric 1 to 8 of lard as ointment as a powerful irritant to the joints, applied locally.
Barium chloride 1 to 2 grs. in scrofulous cases.
Blisters round the hip.
Cod-liver oil.
Counter-irritation by blisters round the hips.
Diet nutritious.
Ferrous iodide in scrofulous cases.
Iodoform in scrofulous cases.
Perfect rest.
Posture straight.

Croup, spasmodic, catarrhal or membranous—Laryngeal Diphtheria—Laryngismus Stridulus—

Acid, boric solution, for nasal injection.
Do. carbolic spray for the membranous variety.
Do. lactic spray or paint (1 in 25) by an atomizer, as a solvent of the membrane.
Do. sulphurous as spray in membranous cases.
Albumen with honey as an emetic.
Alum 1 dr. with honey 1 dr. as a non-depressant emetic in membranous variety.
Antimony (tartar emetic) powder or wine with potassii citras and liquor ammonia citratis as an emetic is useful in croup or catarrhal laryngitis to be used with caution as it is a powerful depressant.
Antispasmin in laryngismus stridulus.
Argenti nitras solution, locally with a sponge or as insufflation.
Atmosphere hot and moist.
Borax solution (1 in 10) as wash.
Bromine as potassii bromidum internally.
Bromoform in laryngismus stridulus.
Calcii lactophosphate.
Calomel ½ gr. with ipecac. ¼ gr. as a laryngeal sedative allays spasm and checks formation of membrane.
Chloral hydrate 5 to 10 grs. to arrest the attack.
Chloroform inhalation, to stop spasm in laryngismus stridulus.
Cod-liver oil.
Collodium cantharidatum application to the throat.
Copper sulphate as an emetic and parasiticide.

Eucalyptus oil as spray or by inhalation.
Ferri murias locally as paint; internally 10 ms. of the tincture with potassium chlorate in membranous croup.
Gaduol.
Glycerino phosphate.
Glycozone 1 dr. internally to prevent gastric disturbance and regulate the bowels.
Gold and sodium chloride.
Hydrogen peroxide solution 1 in 4 of water as a spray over the nose, throat and mouth, to destroy the membranes and prevent their reproduction.
Ichthyol vapours.
Iodine tincture painted externally prevents formation of false membrane.
Lime water as spray or vapour of slaking lime.
Mercury cyanide.
Do. perchloride—large doses.
Do. subsulphate 3 to 5 grs. as an emetic to be given early.
Musk.
Oxygen by inhalation.
Petroleum rectificatum locally to the throat or internally.
Potassium chlorate 2 to 3 grs. with tincture of iron 5 ms. internally very useful after emetics.
Do. bromide solution locally by atomization in spasmodic cough.
Do. iodidum.
Sodium bicarbonate.
Sozoidole sodium as insufflation.
Sulphurated potassa.
Turpentine oil with almond oil internally.
Zinc sulphate as an emetic.

Formula.—Alum, 10 grs.; tr. belladonna, 5 ms.; tr. opii camphorati, 2 ms.; syrupus ipecacuanha, 1 dr.; potassii citratis, 1 dr.; aqua, 2 ozs. Dose—A teaspoonful.

External remedies.—Baths—vapour bath containing vinegar, hot water or vapour (steam) bath. Fomentation. Hot water to the throat, turpentine stupes to the throat, poultices to the throat, burnt salt for dry fomentation to the throat. Steam inhalation with quinine or iodine or bromine. Tracheotomy if paroxysms very frequent and dyspnœa very severe. Cold sponging to the throat. Outdoor exercise in laryngismus stridulus.

Cyanosis of Asphyxia—Asthma—Dyspnœa—Heart disease.

Amyl nitrite by inhalation.
Leeches.
Oxygen by inhalation in cyanesis of asphyxia from toxic gases or due to opium or chloroform narcosis.
Stimulants.

Cystitis—Dysuria—Lithiasis—

Acid, boric, as a dusting powder or solution to wash out the bladder, or given internally or as boroglyceride as injection.
Do. carbolic 1% solution. Injection into the bladder to preserve the urine sweet.
Do. lactic, internally. Injection 1% solution.
Alkalies, citrates and bicarbonates, as diuretics if the urine is highly acid, stop when it becomes alkaline.
Ammonium as benzoate in enlarged prostate or phosphatic deposit.
Do. citrate or borate in chronic inflammation.
Antipyrin 20 grs. as injection into the bladder or rectum.
Arbutin as a diuretic.
Argenti nitras solution (1 in 15) locally in painful cystitis or (1 in 50) as a vesical wash or (1 in 200) as an intravesical injection.

Aristol as dusting powder.
Boroglyceride.
Calcium hippurate.
Cantharides or cantharidin if pain and straining with frequent micturition.
Cantharis tincture 1 to 5 ms. to relieve vesical catarrh, irritation and pain along the urethra.
Carbonated water.
Carlsbad salts.
Chloral hydrate injection, in irritability of the bladder.
Creolin solution as injection in persistent cystitis.
Demulcents.
Fomentation, hot.
Ferri chloride tincture with buchu internally.
Formaldehyde.
Gallobromal.
Glycerin of carbolic acid application.
Guaiacol.
Hydrargyri bichloride as solution to wash the bladder.
Hydrogen peroxide.
Ichthyol as irrigation.
Iodides.
Iodine.
Iodoform alone as dusting powder or suppository with belladonna for painful cystitis.
Iodoformogen as suppository.
Lithium salts, as benzoate.
Lithontriptics.
Methylene blue.
Mineral acids diluted.
Mucilaginous drinks.
Naphthol.
Potassa caustica.
Potassii liquor and hyoscyamus as an anodyne with decoction of triticum repens or barley water in acute cystitis to control pain and micturition.
Potassium salts, as acetate, benzoate, bromide, chlorate, citrate, to affect reaction of the urine. Nitrate or permanganate ½ per cent. solution for injection.
Do. bicarbonate. To affect reaction of the urine.
Do. bromide.
Pyoktannin.
Resorcin.
Salicylic acid—large doses internally or by injection into the bladder. The solution or the salicylates to dissolve mucus in the urine and to prevent decomposition.
Saliformin.
Salol as an antiseptic 5 per cent. solution for injection. To wash out the bladder in purulent catarrh, as a disinfectant; its constituents are excreted with the urine.
Sodii benzoas 1 dr. with tinct. gelsemii 2 drs. and water 6 ozs. One ounce as a wash in painful cystitis and enlarged prostate of old men.
Do. salicylate and sulpho-carbonate.
Do. silicate.
Sodium salts as biborate, bicarbonate.
Sozoiodole sodium 1% as irrigation.
Do. zinc internally to render the urine aseptic or irrigation ½ per cent.
Sulphites, to prevent pus and to preserve the urine sweet.
Sulpho-carborate as antiseptic to preserve the urine sweet.
Sulphur.
Zinc sulphate.

Diet.—Milk.

Injections to wash out the bladder.—Lead acetate (1 in 200 of warm water), acid nitric dilute (1 in 250 of water), borax 1 dr. with glycerin 2 drs., water 2 drs. Dose—½ dr. in 25 drs. of warm water.

External remedies.—Baths—hip baths, catheterism of the urethra, circumcision, evacuation of the urine, elevation of the pelvis, enemata of hot water and poppy head fomentations hot, hot compress over the bladder, hot douche over the bladder region, hot enemata to relieve pain, injection—hot water, vaginal or rectal, leeches to the perineum, poultices—anodyne, rest in bed in horizontal posture.

Deafness—

Ammonium chloride.
Cantharidis ointment 30 grs. to 1 oz. of lard alternated with mercury ointment applied below or behind the ear in deafness due to thickened tympanum.
Castor tincture.
Collodion application to the relaxed tympanum causing deafness.
Faradization of the ear in nervous cases.
Gargles if due to throat affection, chiefly of potassium nitrate, borax to which capsicum may be added.
Glycerin with olive oil locally for dry or ruptured tympanum.
Inflation of the eustachian tube.
Mercury bichloride gargle if due to syphilis.
Olive oil.
Opium tincture locally.
Phosphorus oleate. Mop the tympanum.
Remove wax from the external canal.
Sanitas oil.

Debility—

Acid hypophosphorous.
Alcohol with meals, not to push it if there is torpor of the liver.
Arsenic alone or with iron.
Baths—Turkish.
Bitter tonics.
Calcium salts as phosphate and hypophosphites if debility be due to over-work.
Cod-liver oil.
Eucalyptus.
Gaduol.
Glycerino-phosphates.
Hæmogallol as blood producer.
Hæmol.
Iron salts.
Magnesium hypophosphite.
Manganese alone or with iron.
Orexine.
Potassium hypophosphite.
Sea bathing.
Zinc hypophosphite.

Delirium due to Cerebral Congestion, Typhus and other Fevers—

Acetanilid.
Alcohol if due to exhaustion.
Antimony tart. with opium in delirium of fevers.
Baths, cold douche in maniacal delirium.
Blisters if due to irritant poison.
Bromides, chiefly ammonium bromide and potassium bromide, in large doses.
Chloral hydrate if delirium of fevers is violent, but sometimes dangerous in old drunkards and always in heart disease.
Chloroform inhalation to procure sleep.
Cold douche in maniacal delirium.
Musk in low fever.
Warm bath and cold douche alternately useful in maniacal delirium.

Delirium Tremens—

Acid phosphates.
Do. phosphoric dilute with tincture cinchona.
Alcohol to aid digestion.
Ambergris.
Ammoniæ acetate liquor strengthens drunkards.
Do. liquor.

Ammonii et potassii tartras.
Ammonium bromide alone or with lupulin.
Do. carbonate, in cerebral anæmia and in feeble circulation.
Do. chloride ½ dr. in delirium restores the faculties.
Anæsthetics are dangerous.
Arsenic in morning vomiting with delirium.
Aurum bromide hypodermically.
Bezoar.
Bismuth with hydrocyanic acid.
Bromated camphor.
Bromides, to lessen irritability.
Butyl chloral hydrate.
Chloral at outset very successful, bu dangerous to old drunkards or when heart disease exists.
Chloroform inhalations to procure sleep.
Ethylene bromide.
Fel bovinum.
Glycerin.
Gold and sodium chloride.
Methylal.
Paraldehyde.
Phosphorus in chronic cases.
Potassium bromide.
Do. iodide.
Spiritus ammoniæ aromatic during craving.
Do. etheris comp.
Sulphonal, to procure sleep.
Tartar emetic with opium as hypnotic to control violent delirium and insomnia.
Urethane.
Zinc bromide, to lessen tremor.
Do. oxide 2 grs. as nervine sedative and tonic, to lessen craving.
Do. phosphide.

External remedies.—Baths, hot or vapour, cold douche in maniacal delirium, electricity, emetic, ice to the head to reduce temperature, room (dark), stomach pump, wet-sheet packing to eliminate the poison.

Diet.—Concentrated liquid food. Stimulants in moderation. Animal diet in the fluid form in small quantities, and frequently given. Eggs, soup, milk, cocoa, coffee.

Dementia Paralytica—
Calcium lactophosphate.
Cod-liver oil. Very useful.
Methylal.
Paraldehyde 1 dr. as a calmative and hypnotic.
Sulphonal.
Tonics are very useful.

Dengue or Break-bone Fever—
Acid carbolic 4 per cent. solution as lotion to avoid itching.
Do. salicylic to relieve pain in joints and muscles.
Antifebrin.
Antimony potassio tart.
Antipyrin.
Calomel with ipecacuanha c. opio and quinine.
Camphorated oil. To avoid itching locally.
Diaphoretics as ammonii acetatis liquor.
Emetics as ipecacuanha at the onset.
Mineral acids.
Potassii citratis.
Purgatives as colocynth.
Salicylates to relieve pain in joints or muscles.

Dentition in Children—
Antispasmin.
Borax and potassium chlorate with glycerin as a mouth-wash.
Calcium hippurate.
Calcium phosphate.
Cleanliness of the mouth.
Hypophosphites of calcium and sodium as tonic.

Lancing the gums if there is much tension, or the gums much swollen, but should not be indulged in.
Potassium bromide to lessen irritability and convulsions in children.
Sodium bicarbonate with rhubarb internally for aphthæ.
Zinc oxide with opium in diarrhœa.

Diabetes Insipidus—

Acetanilid.
Acid nitric dilute.
Alum.
Antipyrin.
Arsenic to improve general condition.
Bromides.
Chalybeates.
Creosote.
Galvanism—one pole to the nape of the neck and the other to the loins or to the epigastrium.
Gold chloride.
Iron valerianate. Iron and strychnine as tonic give good results.
Liquor arsenic bromatus.
Neurodin.
Nitroglycerin.
Oxygen inhalation or oxygenated water.
Potassium iodide is curative if syphilitic taint.
Sodium salicylate is very useful.
Zinc valerianate.

Diabetes Mellitus, Glycosuria—

Acetanilid.
Acid boracic solution — antiseptic mouth-wash.
Do. carbolic as mouth-wash.
Do. lactic.
Do. phosphoric—largely diluted or mixed with acidulated waters, to quench thirst.
Do. salicylic.
Adrenal extract.
Alcohol.
Alkalies and alkaline mineral waters in obese subjects and in hepatic torpor are useful.
Alum.
Ammonium carbonate with tincture of opium.
Do. citrate with Dover's powder.
Antipyrin lessens the secretion of urine.
Arsenic bromide or arsenic liquor to improve faulty assimilation in diabetes of hepatic origin and in thin subjects.
Asperin.
Bezoar.
Bitumen.
Calcium hippurate, phosphate or lactophosphate is of benefit in thin nervous and strumous cases.
Cantharidin ointment on the pancreatic region.
Dulcin sweeter than saccharine is useful.
Eau de cologne to sponge the body.
Ether.
Exalgine.
Fel bovinum.
Ferrum redactum or ferri perchloridi is very useful.
Gil-i-armani.
Glycerin alone or with citric acid or phosphoric acid, in place of sugar, has produced good results.
Gold leaf, or gold bromide and arsenic, or gold chloride are useful.
Guaiacol.
Hæmo-gallol as hematinic.
Hæmol.
Hair glove for dry friction of the body.
Hydrogen peroxide.
Hygiene.
Ichthalbin.
Iodoform in 2-grs. doses given internally is very valuable in diminishing sugar.
Iodole like iodoform is equally beneficial.
Koumiss.

Levulose or diabetin resembles carbo-hydrate or saccharine food, but is well oxidised and assimilated by diabetic patients.
Lithium carbonate or citrate 8 grs. with arsenic liquor 3 ms. is very beneficial.
Massage.
Methylene blue is very beneficial.
Mineral waters,—Vals, Vichy, &c.
Orchitic extract very successful.
Oxygenated water is useful.
Pancreatin.
Pea nuts being rich in albumen should be taken.
Phosphorus and phosphates to avert failure of nutrition.
Potassium bromide 20 grs. is a useful remedy.
Do. permanganate.
Purgatives.
Saccharin—not nutrient. Does well for sweetening purposes only.
Sodium salts as arseniate.
Do. citrate.
Do. chloride and phosphate—a warm saline solution is used as an intravenous injection in diabetic coma.
Do. salicylate 10 to 15 grs. with spirit of lavander and water.
Somatose.
Sozoiodole sodium.
Strontii lactas.
Sulphurated lime.
Transfusion.
Uranium nitrate in 3 gr. doses has given decided results.
Urea.

Take regular exercise, wear flannel next the skin, avoid over-work, worry, excitement, Turkish baths, massage.

Diet.—Fish, eggs, meat, cream, butter, almond or gluten bran bread or biscuits, green vegetables should be taken in moderation. Give milk as cure; no other food for 6 weeks, and then animal food. Avoid strawberries, currants, peaches, oranges, nuts, jellies, pickles, vinegar. Take milk in moderation; also tea, coffee, cocoa. Use dry wines. Avoid sugar, starch, farinaceous or starchy food, pastry, puddings of all kinds.

Diarrhœa—

Abrak.
Acid, boric.
Do. carbolic with bismuth useful in fermentative diarrhœa and in cholera infantum.
Do. hydrochloric dilute with tinctura nucis vomici in painless watery stools.
Do. nitric with nux vomica and pepsin if diarrhœa is due to liver disorder.
Do. nitro-muriatic with pepsin if due to intestinal dyspepsia.
Do. salicylic if due to phthisis.
Do. sulphuric aromatic with extract of hæmatoxylon, cinnamon and opium in summer and choleraic diarrhœa.
Do. sulphuric dilute internally.
Alkalies with pepsine in children with sour-smelling stools.
Alum burnt in sub-acute and chronic diarrhœa.
Ammonium carbonate or chloride when watery secretion.
Antipyrin ½ gr. in diarrhœa of children.
Argenti nitras with opium in obstinate chronic cases, in white pasty offensive stools of phthisis and in typhoid diarrhœa.
Aristol.
Arsenic liquor 1 m. with tinct. opii 1 m. before meals in diarrhœa due to undigested food, in discharges of membranous shreds.
Arsenite of copper a good check on diarrhœa.
Bandharo.
Bezoar.
Benzosol.

Bismuth salts—as citrate; nitrate 3 grs. with grey powder ½ gr. in children; ammonium citrate is useful in diarrhœa without irritation, but due to relaxation of the intestinal mucous membrane; oxide, phosphate, or subnitrate 3 grs., with morphia sulphate ⅛ gr., is indicated where desire for stools is felt soon after food; naphtholate and subgallate 20 grs., of great service; salicylate 5 to 10 grs. is useful in diarrhœa of phthisis and of typhoid fever.

Calcium salts, as borate, carbonate as chalk mixture is given in diarrhœa of phthisis and typhoid fever. Chloride in strumous children. Lactophosphate in atonic cases, permanganate, phosphate, sulphophenate, salicylate in diarrhœa with fœtid stools.

Calomel $\frac{1}{10}$ gr. in children with irritable stomach in slimy stools with griping and straining.

Calx saccharata in atonic diarrhœa in children.

Carbo ligni if fœtid stools.

Chloroform with opium after a purgative.

Cold packing over the abdomen.

Copper arsenite or sulphate $\frac{1}{10}$ gr. internally or with iodized starch and opium as rectal injection.

Creolin.

Creosote with spirit ammon. aromatic, capsicum, and opium.

Creta aromatica mixture or pulv. alone or with opium, in sour smelling stools. Opium in children should be given with extreme care.

Gaduol in scrofulous children.

Guaiacol carbonate.

Hydrargyrum cum creta in bilious catarrh to restore the bilious colour and lessen the frequency of the stools.

Ice to spine.

Iodine tincture 1 or 2 ms. in diarrhœa due to atony of intestinal mucous membrane.

Iodo-terchloride liq.

Iron salts, as sulphate, ammonio sulphate, potassium tartrate, pernitrate with or without opium.

Isinglass as congee.

Lead acetate with starch and opium as rectal injection.

Liquor bismuth et ammon. citras or liquor calcis for diarrhœa in children.

Magnesia as antacid in children.

Mercury perchloride (1 in 500) in mucous diarrhœa with clay-coloured stinking pasty motions with flatulence and bad digestion.

Milk or koumiss.

Mineral acids in painless, watery motions, light-coloured and alkaline.

Napthalin.

Naphtol benzoate.

Pancreatin.

Paraformaldehyde.

Peptenzyme in diarrhœa of children.

Potassium bichromate, in diarrhœa due to intestinal ulceration.

Do. chlorate.

Resorcin very useful in diarrhœa of children.

Salol in diarrhœa due to the action of microbes.

Sangjirun.

Silver oxide internally.

Sodium salts as chloride, borate, carbonate, paracresotate, phosphate in acid stools.

Starch iodized alone or with acetate of lead, opium or sulphate of copper and opium as rectal injection.

Tannalbin.

Tannoform.

Thymol 5 grs. is useful as an intestinal antiseptic in diarrhœa of phthisis, chronic diarrhœa, in diarrhœa of children during teething.

Tribromphenol.

Zinc salts as oxide 3 to 10 grs., sulphate with ipecac. and opium or sulpho-carbolate in summer diarrhœa.

External remedies.—Keep the abdomen warm with a flannel belt or binder. Rest in bed is essential.

Formula.—Naphthol 2, bismuth salicylas 2, calc. phosph. 2, creta præparata 2. Dose—10 grs.

Liq. hydrarg bichlor., 2 drs.; liq. bismuthi, 2 drs.; ext. belæ liq., 2 drs.; liq. morph. hydrochlor., 2 drs.; tinct. chloroform co., 2 drs.; aqua cinnamon, 2 ozs. Dose—1 oz. for adult.

Diet.—Cool or cold, light bland food. In recent cases, milk cold, plain or peptonized, alone or with barley water or lime water; gruel, starchy food, whey, arrowroot. In chronic cases digestible but nutritious food as meat juice pounded or minced meat, calf-jelly, fresh fish, raw eggs, whisky, port wine, brandy. Avoid vegetables, acid fruits, nuts, potatoes, fat and fatty rich meat.

Diphtheria—

Acetanilid.

Acid, boric, in solution with thymol as gargle.

Do. carbolic 5 to 10 grs. to 1 oz. of cosmolin or solution as spray by atomiser locally to the throat, to destroy germs and to remove fœtor; strong acid with glycerin is used as a caustic or as a paint in the throat.

Do. carbolic with acetic acid and myrrh as solution or as gargle.

Do. carbolic with iodine internally to prevent systemic infection.

Do. hydrochloric when diluted as gargle.

Do. hydrofluoric as inhalation.

Do. lactic (1 in 25) solution as spray paint or gargle.

Do. salicylic locally as gargle or internally in 10 gr. doses.

Do. sulphurous gas as a spray to arrest the growth, given internally in 1 dr. doses to cause rapid disappearance of the exudation; should be given in milk to children.

Do. tartaric solution locally converts the membrane into a gelatinous mass.

Alcohol with potassium chlorate, a nice local antiseptic, used as a spray by atomiser, also internally given.

Alum and sulphur, equal parts, for insufflation into the throat with deep inspiration.

Do. with potassium chlorate as gargle.

Ammonii carbonas used freely internally.

Antidiphtheritic serum very useful.

Antifungin.

Antitoxin diphtheria in the early stage.

Arsenic iodide $\frac{1}{10}$ gr. internally in diphtheritic sore throat and in sloughing throat.

Asaprol.

Aseptol.

Basicin.

Borax glycerin solution locally.

Bromine vapour by inhalation or 1 drop of 1 per cent. solution given internally with benefit.

Bromol water 1 per cent. disinfectant solution to be kept in the room.

Calcium bisulphite solution as a paint.

Do. chlorate in solution locally removes germs, as lotion for the mouth and fœtor.

Do. lactophosphate.

Calomel with Dover's powder a very efficient germicide; given internally to check plastic exudation.

Chinolin 5 per cent. solution as a paint or tartrate 10 grs. internally.

Chloral with glycerin and water as an application for the throat.

Do. hydrate 15 grs. internally; to be avoided if the heart is weak.

Chloralum.

Chlorinated soda solution as gargle or wash.

Chlorine water solution internally, and as a gargle in sloughing of the throat. A nice prophylactic.

Copper sulphate as an emetic.

Creolin with menthol and toluene applied on a swab of cotton to destroy bacilli and prevent absorption of toxin.

Creosote.

Ferri sulphas diluted with sulphuric acid as a gargle.

Ferropyrin.

Fluorine.

Gycozone internally.

Hydrargyri iodidi internally.

Hydrogen peroxide, solution alone or with 1 in 1,000 or 1 in 200 of cosminol as spray or gargle to the fauces, larynx and pharynx, should be used in the early stage. It destroys germs and young bacilli. A nice prophylactic during epidemics.

Hydronaphthol as a spray.

Ichthyol with mercury bichloride as inunction into the glands of the neck or internally.

Iodine with carbolic acid or with potassium iodide as a paint to the throat. The solution is used as inhalation.

Iodoform or iodol 20 grs. to 1 oz. of cosminol as spray.

Iron chloride, tincture painted as solution or applied by spray to the throat or given internally, 20 ms. if suppuration threatens.

Lime water as a spray to the back of fauces during deep inspiration dissolves false membrane.

Manganesii oxidum.

Mercury bichloride $\frac{1}{150}$ gr. internally alone or with ichthyol if much fever or with antipyrin and ichthyol.

Do. oxycyanide solution $\frac{1}{30}$ gr. to 1 oz. of water as a gargle.

Methylene blue solution as application in ulceration of the throat.

Nuclein internally.

Oxygen inhalation.

Pancreatine.

Pepsin alone or with malt as solvent of the false membrane.

Potassæ liquor solution internally.

Potassium chlorate with cinchona internally and as a gargle.

Do. permanganate (1 in 1,000) as gargle or internally, of great benefit.

Do. bichromate, $\frac{1}{16}$ gr., as an emetic.

Pyoktannin locally.

Resorcin as spray, 10 to 40 grs. to 1 oz. of cosminol.

Sanitas oil as an antiseptic locally.

Sodium salts, as *benzoate*, internally. Dose—1 dr., also as an insufflation. *Borate* solution as gargle. *Chlorinate* liquor as gargle. *Chlorate*, internally. *Fluosilicate* and hyposulphite internally or solution (1 in 16) as a spray to the throat, or as injection into the nose. *Nitrate* and *salicylate* internally 2 per cent. solution. Dose—4 drs. *Sulphate* (1 to 8) internally. *Sulphite* (1 to 8) as injection for nares in nasal diphtheria. *Sulphocarbolate* internally in lieu of carbolic acid. *Hyposulphite* 1 dr. to 2 ozs. of water, or glycerin used locally by a brush or spray to the throat, or by a syringe to the nares or internally.

Sozoiodole potassium or sodium with sulphur as dusting powder or insufflation.

Stimulants—brandy, champagne—used freely.

Sulphur burned in the room.
Do. and alum (1 to 1) as insufflation through a quill into the throat during inspiration, as often as asphyxia is threatened or as a gargle.
Do. rubbed up with water as a gargle.
Thymol with glycerin and water as a gargle, or with chlorate of potash, quinine and brandy given internally.
Tribromphenol.
Trypsin as a spray with an atomizer. A good solvent of the false membrane.
Water—ice in the mouth.

Formula.—Mercury cyanide, $\frac{1}{12}$ gr.; tincture aconite, 30 ms.; honey, 12 drs. Dose—1 dr.

External remedies.—Wet-pack to the throat, fresh air, ice bags to the throat, ice sucked, intubation of the larynx, moist inhalations, nutritive enemata to sustain the system, steam bath locally, tracheotomy in extreme cases.

Diet.—Good food, nourishing and supporting, wines, brandy, soups, milk to maintain strength.

Dropsy—Hepatic, Cardiac and Renal—

Acid nitric dilutum. In cirrhosis of the liver.
Acupuncture in œdema about the feet to be followed by hot foot-bath.
Ammonium chloride if hepatic.
Analgesine.
Arsenic in dropsy due to feebleness of heart, in swelled feet in old age or debility.
Atmosphere, warm and dry.
Aurum or gold salts, in ascites and other dropsies due to hepatic disease.
Baths—warm, to be followed by long walks.
Bromine if due to scarlatina or to renal or hepatic form.
Calomel ½ gr. with squill and digitalis useful in cardiac dropsy.
Chalybeate waters (purgative).
Diuretin 15 grs. in water. In cardiac and renal dropsy, hepatic cirrhosis, in œdema due to diseases of the heart or kidneys. Avoid acids and acid vegetable juices.
Ferri et ammonii acetatis liquor.
Do. et potassio tartras. In dropsy due to anæmia.
Ferropyrine.
Fuchsine.
Hæmo-gallol in marked anæmia.
Incisions ¾ inch long over external malleolus, to be followed by hot sponge moistened with weak carbolic acid solution and kept to incisions.
Iodine locally to the abdomen in ascites.
Lactose.
Mercury perchloride liquor or hydrargyrum cum creta or pilulæ hydrargyri with squill and digitalis in dropsy with dyspnœa due to cardiac disease.
Mistura magnesia et asafetida.
Nitrous ether with other diuretics.
Paracentesis abdominis in severe cases.
Potassium and sodium salts as the acetate and bitratrate, diluted with water; useful in desquamative nephritis and in dropsy due to valvular disease of the heart. Potassium carbonate or the iodide in large doses and sodium tartrate and sulphate are useful in renal dropsy.
Resorcin.
Saliformin.
Saline cathartics.
Sodium benzoate and phosphate in dropsy with albuminuria.
Theobromine and its salts.
Urea.
Uropherine benzoate.
Do. salicylate.

Diet.—Solid, dry food, light and nourishing diet in dropsy of serous cavities. Skimmed milk in renal dropsy.

Duodenal Catarrh—Acute and chronic and obstruction to bile ducts.

Acid citric.
Acid nitro-hydrochloric internally, also as a bath, 3 drs. to 8 pints of water to the hepatic region.
Arsenic in jaundice due to catarrh of the bile ducts after duodenal catarrh.
Aurum salts, very useful.
Bismuthi phenylicum.
Do. salicylate 5 to 10 grs.
Calomel to relieve obstruction.
Gold sodium chloride.
Magnesii sulphas.
Naphthalin.
Papain.
Pancreatin.
Potassium bichromate $\frac{1}{10}$ gr. useful in duodenal dyspepsia, with coated tongue, pale stools, hypochondriac pain, vomiting of glairy fluid.
Resorcin.
Salol, very useful.
Sodium cresotinate.
Do. phosphate 1 dr. In duodenal catarrh and in catarrh of the bile ducts resulting in jaundice and hepatic colic.
Do. salts as benzoate.
Vichy water contains sodium phosphate, hence very useful.

Diet.—Avoid fats or starch. Give milk, eggs, oysters, fish, &c.

Dysentery—

Acid boric as injection or irrigation with a double channel tube.
Do. carbolic internally 10 ms. with syrupus rhei aromaticus 1 oz. and oil of sassafras 5 ms. Dose—1 dr.
Do. nitro-hydrochloric dilute as lotion (1 in 20) in chronic cases.
Do. sulphuric dilute, with saline purgatives.
Do. salicylic with opium (7 to 1) as an intestinal antiseptic.
Aluminium acetate liquor internally for children.
Do. sulphate with Dover's powder in chronic cases.
Ammonium chloride.
Argenti nitras, $\frac{1}{8}$ gr. after subsidence; at a later stage, $\frac{1}{4}$ gr. with opium if acute symptoms internally or as an enema of $\frac{1}{10}$ gr. in 2 ozs. of water beyond the colon and rectum. Locally as an escharotic through anal speculum to rectal ulcers or as an antiseptic wash for the intestines (1 in 1,000) in chronic cases.
Aristol.
Arsenic liquor 2 ms. with opium 2 ms. often benefits when dysentery is due to malaria.
Baptisin.
Benzonaphtol.
Bismuth salts, as oxide, or salicylate internally; subcarbonate, with tincture opii (2 to 1) as enema; subnitrate 15 grs. internally, also used with starch and chalk mixture as a rectal injection.
Carbo ligni in chronic cases.
Cold enema to relieve pain and tenesmus.
Copper sulphate $\frac{1}{8}$ gr., useful in chronic cases.
Creolin as an enemata.
Creosote with morphia and acetic acid very useful.
Emetic of common salt, long pepper and hot water.
Ferri chloridum tincture, a weak solution. To irrigate the bowels in bad cases with great benefit.
Do. pernitratis liquor. In chronic cases.
Do. subsulphatis liquor as enema.
Glycerin 1, with linseed tea 4, internally to lessen tenesmus.

Hydrogen peroxide very useful.
Hydrargyrum cum creta for children if the stools are bloody or slimy.
Ice water for rectal injection.
Injections of emollients in the early stage and of astringents in advanced stage.
Iodine with potassium iodide as an enemata.
Lead acetate with morphia and acetic acid as enema or as suppositories. To allay tenesmus.
Magnesium salicylate.
Mercury bichloride internally in chronic cases, and as rectal injection (1 in 1,000) in acute cases.
Methylene blue, it being partly excreted by the fœces.
Naphthalin as suppositories.
Nickel sulphate internally.
Potassium bitartrate in scorbutic dysentery.
Do. chlorate as enema.
Salol as an intestinal antiseptic.
Sang-jirun internally.
Sodæ chlorinatæ liquor as enema.
Sodium benzoas in intestinal catarrh and carbolate as an intestinal antiseptic.
Somatose.
Sulphur in chronic cases.
Tannalbin.
Tannoform.
Tribromphenol with opium and almond oil internally.
Zinc oxide. Dose—3 to 5 grs.
Zinc sulphate as enema.

Diet.—Avoid animal food; avoid stimulants; take liquid food, milk diet, peptonized milk, light soups, beef tea, broths, barley or rice conjee.

Dysmenorrhœa—

Acetanilid, to relieve the pain.
Acid carbolic 5 per cent. solution with tincture iodine application to the uterine cavity.
Do. salicylic.
Ammonium acetate liquor ½ oz. with ipecacuanha ⅓ gr. relieves pain and keeps the action of the skin.
Do. chloride.
Amyl nitrite, by inhalation in chlorotic girls in neuralgic variety.
Antikamnia to relieve pain.
Antipyrin as an analgesic.
Arsenic liquor 3 to 5 ms. with tincture of digitalis 10 ms. between the periods in the membranous variety.
Avoid anodynes.
Borax with belladonna internally in the membranous variety.
Boroglycerin 10 per cent. locally to the os.
Bromides as a hypnotic.
Butyl chloral hydrate.
Carbonic acid injected into the vagina with good results.
Cerium oxalate.
Chloralamid 30 grs. to prevent an impending attack.
Chloroform by inhalation or as liniment as anæsthetic to relieve pain.
Copper arsenite.
Croton chloral to relieve pain in neuralgic form.
Electricity—galvanic current in neuralgic and the inverse current in congestive variety.
Ether.
Ethyl bromide.
Ferri iodidum.
Ferropyrine.
Gold and sodium chloride.
Hæmogallol.
Hæmol.
Hydrargyri perchloride solution (1 in 2,000) application to the interior of the os.
Iron preparations if depending upon anæmia.
Magnesium sulphate.
Manganese dioxide.
Nitroglycerin.
Potassium bromide if the discharge is not membranous.

Potassium nitrate internally.
Silver oxide.
Sodium borate with extract belladonna in the membranous form.
Spiritus ammoniæ aromatic, better than alcoholic stimulants.
Spiritus etheris compositus.
Stypticin as uterine sedative.
Triphenin.
Zinc cyanide.

External remedies.—Baths—hot footbath with mustard, bougies to the cervix, curetting the interior of the uterus, dilatation of the cervix, displacement (if any) to be corrected, douche (hot), electricity in neuralgic cases, galvanic current in congestive cases, stenosis (if any) to be corrected, spinal ice bag if discharge is scanty, spinal hot water bag if discharge is profuse, warm water injection into the uterus, warm covering in bed.

Dyspepsia, Hyperacidity, Biliousness, Flatulence, Pyrosis, Gastralgia, Gastrodynia—

Abrak.
Acetanilid.
Acid, carbolic internally in dyspepsia due to miasma.
Do. carbonic and water, to relieve pain of gastrodynia.
Do. hydrochloric dil. with pepsin in pyrosis and atonic gastric condition, after meals.
Do. lactic with pepsin in imperfect digestion.
Do. nitric with bitters.
Do. nitrohydrochloric with pepsin after meals in gastric atony with mental despondency, oxalates in the urine, and with offensive gas.
Do. phosphoric dilute before meals.
Do. salicylic to relieve paroxysmal pain.
Do. sulphurous 5 ms., well diluted, in acid eructations.
Alcohol with food in atonic dyspepsia, with loss of appetite due to fatigue, also in indigestion and during convalescence from acute diseases.
Alkalies before meal increase the gastric juice, better than acids; alkaline mineral waters before meals or 3 hours after food in atonic dyspepsia of obese subjects.
Alumini hydras given in pyrosis gives relief.
Allyl tribrom.
Ammonium carbonate.
Do. fluoride.
Arsenic liquor 1 m., alone or with iron, before meals acts with benefit, in irritative dyspepsia, heartburn in neuralgia of the stomach and diarrhœa excited by food.
Ætheris spiritus compound 15 ms. to relieve the pain quickly.
Aurum chloride in nervous dyspepsia.
Benz-naphtol.
Beta naphthol.
Bezoar.
Bismuth alone or with arsenic, pepsin, cerii oxalas or euonymin or with aromatic powder and morphia in gastralgia due to irritation.
Do. salts, as *citrate*; *subgallate* 10 grs. with magnesia, 10 grs. in chronic cases; *subiodide*, *subnitrate* mixed with vegetable charcoal, in flatulent dyspepsia; *oxychloride*, *oxybromide*, *salicylate* in chronic catarrh.
Bitters with acids or alkalies.
Calcium saccharata.
Do. salts as carbonate, lactophosphate.
Calomel ½ gr. with hyoscyamus 3 grs.
Calx chlorinata.

Carbo ligni.
Carlsbad salt.
Cerium oxalate.
Charcoal, if much flatulence.
Chloral, hydrate 5 to 10 grs. as a gastric sedative and antiseptic in nervous dyspepsia with severe gastric pain.
Chloroform 2 to 5 ms. on sugar internally gives relief if there is rapid fermentation of food and evolution of gas soon after eating; efficient in acute dyspepsia in neurotic subjects.
Cod-liver oil.
Cold water before breakfast.
Creosote in fermentative variety given after food; it checks the pain.
Creolin.
Emetics—enemata.
Ether.
Fel bovinum.
Ferri phosphas.
Ferropyrin.
Galvanism to the pneumogastric and to the stomach.
Glycerin alone or with soap and gluten as suppository.
Glycerino-phosphate internally.
Glycozone for atonic and acid dyspepsia.
Gold chloride
Grey powder 1 gr. during chronic dyspepsia.
Hydrogen peroxide.
Hypophosphites of lime, soda, iron, ammonia and potash.
Iron and bismuth citrate.
Ichthalbin.
Ingluvin, to promote digestion.
Lactopeptine.
Lime water with milk.
Liquor calcis.
Do. bismuthi et ammonium citrate.
Lithium carbonate and iodide.
Magnesia alone or with quassia in acidity.
Malt extract.
Manganese black oxide 10 grs. in pyrosis and gastrodynia.
Massage.
Mercury, yellow oxide, $\frac{1}{30}$ to $\frac{1}{10}$ grs. as cholagogue.
Milk, fresh buttered milk, koumiss.
Naphthol.
Do. benzoate.
Nitro-glycerin, to relieve pain.
Orexine tannate.
Pancreatin to be added to soups, peptonized milk, in intestinal indigestion.
Pepsin saccharated with hydrochloric acid is useful in gastric indigestion.
Peptenzyme.
Potassium salts, as *bichromate*, *carbonate*, *cyanide*, *iodide*, *nitrate*, *permanganate*, *sulphate*.
Purgatives.
Resorcin.
Saccharin.
Salicin.
Salophen in intestinal dyspepsia with flatulence.
Silver salts, as *chloride*, *iodide*, *oxide*, *nitrate* $\frac{1}{3}$ gr., or silver oxide $\frac{1}{2}$ gr., with hyoscyamus before meals to relieve the pain in gastric neuralgia.
Sodium salts, as *sulphite*; *hyposulphite* 10 grs. with quassia; *salicylate* in fermentative gastralgia; *carbonate* 40 grs. with ginger 5 grs., calumba tincture $\frac{1}{2}$ dr., and aromatics in dyspepsia with flatulence; *chloride*, *sozoidole*, *sulphocarbolate* after meals. *Taurocholate*.
Somatose.
Strontium salts, as *lactate* or *bromide*, useful in acetic or lactic fermentations and in dyspepsia.
Water, cold, 4 ozs., before breakfast, in flatulent dyspepsia.
Water, hot, 8 ozs. before each meal or before going to bed; a nice cure for dyspepsia.
Zinc oxide 5 grs., with aromatic powder and morphia, given before food in gastralgia occurring after food.
Do. salts, as ferrocyanide.

Diet.—Dry diet relieves ice water dyspepsia, or that due to excessive acid beer drinking. Digestible food, as soups, meat juice, good fish, lamb, mutton, game, chicken or fowl, dried toast, farinacious food or biscuits, milk should be taken in small quantities. Tea, coffee in moderation; stimulants if necessary. Avoid over-feeding, over-cooked food, plenty of iced water, fats, butter, pastry, sweets, sauces, curries, pickles, fat, rich food, green vegetables, acid fruits, tea, sour wines, nuts, kernels, unripe fruits, &c. Food should be well masticated; it should be eaten slowly, generally taken in small quantities in company of friends. While taking it, the patient should be free from worry or excitement; should cultivate out-of-door habits. Fresh air, gentle exercise, Turkish and warm baths, warm clothings, and regularity in the hours of food and sleep and attention to the bowels are necessary requirements.

External remedies.—Acupuncture, aquapuncture, emetics, galvanism to the pneumogastric and to the stomach, hot application, massage, purgatives, counter-irritant.

Formula.—(1) Acid hydrochl. dil., 40 ms.; pepsine porci., 40 grs.; tr. capsicum, 1½ drs.; tr. nucis vomici, 1½ drs.; spt. vini galici, 1½ oz.; tr. gent co., 3 drs.; aqua, 4 ozs.; syrup limonis, 1 oz. Mix. Dose—½ to 3 drs.

(2) Soda bicarb., 45 grs.; acid hydrocyan. dil., 4 ms.; spt. ammon. aromat., 2 drs.; spt. chloroform co., 2 drs.; tr. nucis vomici, 2 drs.; tr. zingiber, 2 drs.; infus gent co., 8 ozs. Mix. Dose—2 to 3 drs.

Dysphagia—Choking during Swallowing—

Acid hydrocyanic with water as gargle.

Ammonium bromide in warm solution as a spray in dysphagia due to disease of the larynx.

Bromide of potassium internally if due to hysteria or in congenital dysphagia for liquids in children, but no malformation.

Cajuput oil in nervous dysphagia with success.

Chlorine water in hot solution as spray in laryngeal dysphagia.

Galvanism in the vicinity of the œsophagus in hysterical cases.

Ice to suck.

Iced water-sipping in spasmodic dysphagia.

Iron, quinine and strychnine for post diphtherical dysphagia.

Sedative agents in warm solution as spray or swab in phthisical laryngitis or if due to tonsillitis.

Dyspnœa due to cardiac, pulmonary, pharyngeal, laryngeal or tracheal diseases, angina pectoris, asthma, bronchitis, croup, emphysema, phthisis—

Ammonium carbonate internally.

Amyl nitrite in cardiac and other forms of dyspnœa.

Arsenic in dyspnœa due to weak heart or in that of chronic bronchitis.

Bleeding in sthenic subjects of pneumonia with lividity of the face and full pulse and pulmonary embarrassment.

Chloroform internally or a few whiffs as inhalation in cough and dyspnœa of bronchitis and of phthisis.

Dry cupping over the back is very useful in pulmonary or cardiac trouble.

Ether, 1 dr. doses in uræmic dyspnœa, also where there is pulmonary engorgement.

Ethyl iodide as inhalation.

Do. nitris in cardiac cases.

Oxygen inhalation to relieve dyspnœa of advanced phthisis or of mitral heart-disease.

Potassium iodide in large doses.

Pyridine as inhalation in cardiac cases.

Spermine.

Terpin hydrate 2 to 5 grs. in asthmatic dyspnœa.

Thoracentesis if pleural effusion.

Ear Affections—

Acid, boric, dry, by insufflation into external meatus, after a weak astringent injection.
Do. hydrobromic dilute.
Ammonium hydrochlorate.
Antipyonin.
Astringent injection to relieve inflammation.
Bismuth subgallate as a dusting powder.
Carbon bisulphide.
Cupri sulphas.
Di-iodoform as an antiseptic.
Electricity—faradization.
Fomentations.
Hydrogen peroxide, to soften ear wax.
Iodole very useful in eczema of the ear used by insufflation into the canal or as ointment in dry eczema.
Leeches to relieve the pain.
Pyoktannin.
Sodium bicarbonate or borate solution syringe into the ear.
Do. bromide 30 grs. with benefit in tinnitus aurium.
Sozoiodole, zinc.
Warm water by syringe, to remove wax and foreign bodies.

Ecthyma—

Borax solution with rose water or elder flower water.
Chlorinated lime solution as a lotion.
Cod-liver oil locally and internally.
Gaduol internally as resolvent.
Glycerin locally.
Grape cure.
Ichthalbin internally as tonic.
Ichthyol locally.
Iodoform locally.
Lead acetate liquor 1 to 8 of water locally as a soothing application.
Potassium chlorate as lotion.
Zinc oxide with camphor and glycerin—an excellent application.

Ectropion and Entropion—

Collodion, concentrated. In entropion by causing contraction of the lid thus restoring its old position.
Epilation of the lashes in entropion.
Faradization in paralytic ectropion.
Removal of eyelashes. In entropion good results follow.
Silver nitrate freely applied; application to the exposed surface of the lower lid due to hypertrophied conjunctiva after inflammation.

Eczema—Impetigo—

Acetanilid.
Acid boric with liquor plumbi as lotion, or with vaseline as ointment locally in intertrigo and impetigo.
Do. carbolic internally, also as ointment, 20 grs. to 1 oz. of cosmolin, is used externally in chronic form.
Do. chrysophanic 25 grs. to 1 oz. of cosmolin.
Do. mineral as nitric, and phosphoric internally to improve digestion.
Acid picric 1 per cent. solution locally.
Do. pyrogallic 10 to 40 grs. to 1 oz. of cosminol, locally.
Do. salicylic with soap as a salicylated soap plaster, or with 10 grs. to 1 oz. of cosmolin as ointment in eczema of the hands and feet.
Adeps lanæ locally.
Alkalies—weak solutions as a wash.
Alum, aluminium oleate or alumnol to check profuse discharge.
Amyli as a dusting powder.

Argenti nitratis with spiritus ætheris nitrosi (1 to 12) as solution or as paint.

Aristol 20 grs. to 1 oz. of cosminol is an excellent application.

Arsenic iodide $\frac{1}{10}$ gr., or Fowler's solution 5 ms., on a full stomach, in chronic eczema of vulva, scrotum, anus, &c. Examine the urine, and if renal irritation exists, discontinue its use.

Barium iodide.

Baths, warm water medicated with potassium carbonate, sodium carbonate, borax, potassium acetate, &c.

Benzoate ointment to remove exudations and scales.

Bismuth salts, as subcarbonate or subnitrate; as powder or as ointment with 1 to 8 of glycerin, locally in dry eczema of the hand.

Do. subgallate locally if much exudation.

Blister in chronic cases.

Brown citron ointment with tar ointment to the margin of the lids in eczema and on to the hairy parts of the face.

Buck wheat flour locally applied.

Calamina preparata as lotion.

Calcium lithio-carbonate internally.

Do. sulphide $\frac{1}{10}$ gr. in acute or chronic cases of pustular form.

Calomel with zinc oxide as a dusting powder in impetigo.

Cantharidis with vaseline locally.

Chloral hydrate with glycerin locally, or as ointment with petroleum, or as lotion.

Cimolite as a dusting powder.

Cod-liver oil locally in cracks, and internally in malnutrition.

Collodion, flexible, to cover the pustules in impetigo.

Copper sulphate with cocoanut oil locally.

Creosote ointment.

Diachylon ointment next to mercurial ointments.

Diaptherin.

Donovan's solution 5 ms. internally.

Electricity as a cure in obstinate cases.

Emol as dusting powder.

Epidermin.

Eugenol ointment.

Europhen locally.

Gaduol as an alterative tonic in scrofulous cases.

Gallanol, gallo bromol, locally.

Glycerin with borax or tannin locally.

Do. locally after caustic lotions are used.

Do. plumbi subacetatis.

Graphite as an ointment (1 to 10) of lard or with inert powder, as lycopodium or precipitated calcium phosphate, in fissured eczema of the hands and behind the ears.

Hydrargyri ammonio chloridum cum sulphur ointment.

Hygiene.

Ichthalbin internally as assimilative.

Ichthyol, in 10 per cent. of cosminol as ointment.

Do. with collodion as a paste locally.

Iodoform ointment.

Iodoformogen, iodole, as dusting powder.

Iodopin, if due to syphilis and in impetigo.

Iron arseniate or sulphate internally.

Kaolin ointment.

Kashisadi tel.

Kieselghur as dusting powder.

Lanolin as emollient application.

Lead soluble salts alone as lotion when much inflammation and discharge, or with glycerin as ointment, or as strong solution in vesicular or pustular conditions.

Do. carbonate as emollient and nitrate locally in impetigo.

Lime water with glycerin or olive oil in acute cases as a sedative application and to check discharge.
Liquor carbonis detergens locally.
Do. potassæ or strong solution of potash in chronic cases, locally applied to infiltrate patch of chronic eczema before healing.
Losophan.
Mercurial ointments containing ammonium chloride, black oxide, red oxide, nitrate, mild chloride, or red iodide is an excellent application in chronic indolent form.
Mercuro iodo hæmol, if due to syphilis, locally in impetigo.
Mercury as black and yellow washes in vascular and pustular conditions.
Do. oleate with oleate of zinc.
Milk cure.
Naphthalin.
Naphthol, ½ dr. to 1 dr. of cosmol, as application.
Nosophen powder for insufflation.
Phosphorus $\frac{1}{100}$ gr. in oil or pill. As a hepatic stimulant useful in chronic eczema.
Pilulæ hydrargyri subchloride internally.
Pix liquida, internally when arsenic is contra-indicated.
Plumbi stearas locally.
Potassium salts, as acetate or chlorate internally in iodide; also internally in syphilitic cases; sulphide in water locally in eczema; sozoiodole.
Poultices to remove scabs.
Pykotannin.
Pyrogallic acid ointment.
Resorcin ointment.
Salol, as an antiseptic and deodorant powder.
Soaps, petroleum and carbolic, glycerin, to allay itching.
Sodium salts, as chloride, with glycerin and rosewater as ablution in the exudation stage; borate with plumbi acetas ointment; bicarbonate as lotion; arsenate hypodermically into the patch to change an indolent form into an acute one.
Sozoiodole zinc.
Sulphides as baths in chronic cases.
Sulphur internally in chronic eczema.
Do. iodide.
Talc as dusting powder.
Tannin with glycerin locally.
Tannoform.
Thiol, as a dry dusting powder, very efficient, better than ichthyol.
Thioresorcin locally.
Thymol with zinc oxide (1 in 10).
Thyroid extract used with benefit.
Tumenol.
Turkish baths.
Warm baths.
Yolk of egg with water.
Zinc salts as carbonate and oxide as dusting powders.
Do. oleate 10 per cent., 2 drs. of it in 10 ozs. of cosmolin, as ointment alone or with stramonium or with crude petroleum to avoid itching.
Do. sulphate with zinci oleas, alum and rose water as lotion—a nice protective.

Emaciation or wasting—

Arsenic—a long course leads to fattening and a gain in colour.
Calcium phosphate in chronic wasting disease.
Cinchona improves appetite.
Cod-liver oil against malnutrition and marasmus in children. Given internally and applied with friction.
Iodine improves digestion and gives strength and plumpness to the body.
Iron salts promote digestion, cause a gain in flesh and colour.
Liquor ammoniæ—injection or internally.
Do. potassæ—injection.

Magnesium sulphite. Dose—10 to 30 grs.
Olive oil by friction and inunction.
Opium.
Pepsine. To promote digestion of food.
Potassium iodide.
Rest.
Stimulants.

Emphysema of the Lungs—Leading to Asthma, Bronchitis, Dyspnœa, &c.—

Ammonium iodide with arsenic or with copaiba, turpentine and eucalyptol for bronchitis.
Arseniate of soda.
Arsenic when emphysema is due to recession of a rash.
Chloral hydrate against dyspnœa brought on by catching cold.
Cod-liver oil to be given for a long time.
Cubebs tincture as an expectorant.
Dionin.
Ether sulphuric with lobelia and conium.
Ethyl iodide as inhalation.
Gaduol.
Hæmogallol.
Hæmol.
Hypophosphites very useful.
Iodine and liquid vaseline as inunction to the chest.
Iron phosphate, quinine and strychnine and other chalybeates are very useful.
Lactophosphates.
Musk.
Potassium iodide 10 grs. with potassium bromide, senega and Virginean prunes affords great relief next to morphine.
Phosphates of iron, quinine, strychnine is of benefit.
Purgation freely.
Resorcin.

Formula locally.—Chloroformi, 2 drs. with liniment ammoniæ, 1 oz. and liniment saponis 1 oz. Application to the chest. Internally ammon. bromide, 2 drs.; tinct. lobeliæ, 2 drs.; ether sulphuric, 3 drs.; tinct. conii, 2 drs.; tinct. stramonii, ½ dr.; mist. amygdale, 6 ozs. Dose—$\frac{1}{6}$. In paroxysmal cough.

External remedies.—Bleeding if right heart is engorged, change of air to pine wood regions, counter-irritants persistently used, flannel next to skin over the chest, flying blisters, galvanic current (continuous), gymnastics to the lungs, thermal mineral spring baths.

Inhalations.—Arsenical cigarette, chloroform, compressed air, ether, stramonium cigarettes.

Empyæma—Pyothorax—

Acid carbolic, a weak solution, for injection after evacuating the pus.
Do. salicylic solution with alcohol and water to wash the cavity, to remove the fœtid pus.
Ammonium acetate of iron with quinine if the disease shows tendency to prolong.
Aspiration and valvular drainage or free incision.
Carbolate of iodine as an injection or a wash.
Chlorine inhalation to remove fœtor.
Chlorine water as a solution to wash the cavity.
Cod-liver oil—tonic.
Creosote.
Ferri et ammonii acetate liquor, given in bronchiectasis.
Gaduol.
Ichthalbin as assimilative and alterative.
Iodine carbolate for injection.
Do. in solution (1 in 15) as an injection into the cavity after tapping.

Iodine solution (1 in 15) of water as a wash to prevent re-formation of pus.
Do. tincture to be thrown in the cavity.
Iodoform.
Iodoformogen.
Styrone.
Turpene—Inhalation for dyspnœa is of benefit.

Endocarditis,—Myocarditis—

Acid salicylic is useful in the rheumatic form.
Alkalies—as carbonate of potassium is given until urine is alkaline to prevent permanent changes about the valves.
Anti-rheumatics.
Calomel
Carbolate of iodine inhalation.
Chloral hydrate.
Ether, hypodermically.
Iodine.
Lithium citrate or acetate is given to render the urine alkaline.
Mercury with alkalies to prevent fibrinous deposits.
Potassium carbonate, useful to liquefy exudation.
Do. iodide to promote absorption of the exuded lymph.
Stimulants as ammonium carbonate or wine if there is great depression.

External remedies.—Blisters, cupping, ice bag over the heart, leeches in acute cases only. Poultices give great relief.

Enteritis—Intestinal Inflammation—Gastro Enteritis—

Acid boric as rectal enemata.
Argenti nitras internally in chronic form.
Arsenic, in small doses, with opium, is very efficacious.
Asepsis of the lower bowels by enemata of sodii benzoas, boric acid, sodium salicylate and resorcin.
Benzbetal.
Bismuth salts as ammonium citrate, salicylate, subgallate, given internally.
Calcium salicylate.
Calomel.
Chlorine water.
Copper arsenite and sulphate internally.
Creolin 1 gr. internally, as antiseptic.
Eudoxin 5 grs. internally.
Helenin 2 grs. internally.
Ice to suck.
Ichthalbin internally.
Lead acetate as intestinal sedative.
Leeches to the abdomen.
Lime water useful in mucous enteritis.
Naphthalene to remove fœtor of stools.
Poultices, linseed, large, and as hot as can be borne.
Resorcin as an antiseptic enemata.
Rest in bed.
Sodium benzoate as an antiseptic enemata.
Do. nitrate.
Do. salicylate.
Tannalbin.
Tannoform.
Water, hot, for fomentation, followed by cold water compresses.

Diet.—Bland diet, beef tea, skimmed milk.

Enuresis—

Cantharides tincture 1 to 2 ms. if due to paralysis of the bladder.
Chloral hydrate 3 grs. in enuresis in children.
Collodion to be painted over the prepuce.
Habit to retain urine as long as possible.

Iron iodide syrup 20 ms. in strumous cases.
Potassium bromide, useful if due to paralysis of the sphincter vesicæ.
Potassium nitrate useful for children.
Sodium chloride to be eaten by children.

Diet.—Bland fluids; avoid meat.

Epididymitis—

Acid phosphoric internally in debility.
Do. salicylic.
Ammonium chloride, with alcohol and ether solution locally.
Antimony tart. with sodium salt if due to gonorrhœa.
Bismuth subnitrate paste or poultice over the scrotum.
Cathartic salines.
Collodion locally in gonorrhœal cases.
Gold salts internally.
Ichthyol.
Iodine with mastiche and flexible collodion or iodine ointment to relieve induration.
Kaolin.
Mercurial ointment alone or with belladonna or oleate 20 per cent. with morphine applied locally.
Methyl chloride as spray to the scrotum or over cotton wool first applied over the scrotum.
Nitrate of silver 20 grs. to 1 oz. of water, or an ethereal silver solution painted over the scrotum, will abort.
Plumbi subacetas (1 in 15) locally or iodide with potas. iodid, belladonna and lard as ointment.
Sambarsing paste locally.
Silver nitrate, strong solution, 20 grs. to 1 oz., locally applied to the scrotum.
Spiritus etheris nitrosi, locally.

External remedies.—Alcohol and water (evaporating lotion), cold effusion, compress, elevation of testicles and pelvis, fomentation, heat, moisture and pressure, hot baths, hot lotions to the testicles, ice bags to relieve the pain, leeches, punctures to relieve tension and pain, rest in the recumbent posture or in bed, strapping to support the testicle, suspensory bandage.

Formula.—Unguentum iodidum compound.—Plumbi iodidi 5, potassium iodide 2, extract belladonna 2, extract opii ½, lanolin 45. Mix. Application.

Epilepsy—

Acetanilid 6 grs. in cachets is of benefit in cases of full habit, red face, injected eyes, &c., where bromides fail.
Acid hydrobromic with extractum stramonii liquidum internally.
Do. hypophosphorous dilute.
Do. picrosmic.
Actual cautery.
Ammoniacal vapour as inhalation.
Ammonium bromide alone or with calcium bromide or with antipyrin is very efficient. Ammon-chloride or potassium bromide before meals, with strychnine or arsenic and vegetable bitters. Ammonium salts, as carbonate valerianate is useful in the hysterical form.
Amyl nitrite as inhalation or 2 to 4 ms. internally with mucilage in the beginning is useful.
Amylene hydrate or of 10 per cent. solution with atropine is useful in nocturnal cases, or where bromides have failed.
Anæsthetics.
Aniline sulphate.
Antipyrin 6 grs. with ammonium bromide 20 grs. during the menstrual period is very useful in some obstinate cases.

Argenti chloridum or nitrate is of benefit, but it stains the skin, and hence avoided.

Do. phosphas (tribasic). Dose —⅛ to ½ gr. internally.

Arsenic bromide—$\frac{1}{50}$ to $\frac{1}{15}$ of a grain in epileptic form, vertigo or due to gastric disorders.

Aurum bromide ¼ gr. alone or with arsenic bromide solution 5 ms. give satisfactory results.

Bezoar 1 gr. internally.

Bismuth subnitrate or valerianate with antispasmodics internally.

Bromides or bromine salts as rubidii bromidum, rubidium ammonium bromidum in large doses and for a long time; they should be stopped temporarily if they cause profound muscular depression or mental alienation.

Bromoform.

Bromohæmol.

Bromolin.

Cantharis vesicatoria tincture 2 ms. internally.

Castoreum internally.

Chloral hydrate with bromides is suitable in nocturnal variety with tendency to insomnia, violent convulsions or maniacal excitement; to be used with care and avoided if there is weak heart.

Chloroform inhalation during the paroxysm and at intervals in hysterical cases.

Cod-liver oil to improve assimilation.

Copper salts as ammonium sulphate ¼ gr.; the nitrate or the oxide is given with benefit in cases originating from the stomach.

Enetics.

Ether sulphuric internally.

Ethylene bromide.

Ferri bromidum.

Do. perchloride.

Fluorides.

Gaduol.

Gold bromide.

Head to keep low down.

Hydrargyri bin-iodidum.

Hydrogen peroxide is useful as a spray.

Hypophosphites of lime, soda, potash, ammonium and iron alone or with bromides.

Iron alone or with potassium bromide.

Do. hot, to the neck.

Do. valerianate.

Liquor arsenici bromatus.

Lithium bromide in ½ dr. doses if potassium bromide has failed.

Meat diet.

Neurodin.

Nickel bromide 5 grs. in epilepsy occurring at the menstrual epoch.

Nitrite of amyl inhalation.

Do. of sodium.

Nitroglycerin 1 per cent. solution 1 to 2 ms. internally is more enduring than amyl nitrite.

Oleatum argenti.

Orchitic extract with benefit.

Ozone.

Paraldehyde.

Phosphorus.

Potassium nitrite.

Do. osmate.

Do. salts as bromide 40 grs. or iodide 10 grs.

Rubidium iodidum.

Seton to the back of the neck.

Silver salts, useful agents.

Sisan bhashma.

Sodium biborate 20 grs. in nocturnal fits and in nervous form better than bromides.

Do. bromide, 20-gr. doses, arrests the disease.

Spermine is used with benefit.

Stanni chloridum, ¼ gr.

Strontium bromide, 20 grs., is often combined with physostigmine, liable to produce bromism.

Zinc salts, better used than copper or silver salts. Zinc bromide 5 grs. Zinc oxide 2 grs. is useful in cases originating from the stomach. Zinc valerianate, citrate and lactate cause stomach derangements, and hence used with caution.

External remedies.—Anæsthetics, actual cautery, blister, cold baths, dry cupping, electricity, excision, forcible extraction of muscle where the aura is seated, head to be kept low down, inhalation of chloroform, oxygen inhalation, seton to the nape of the neck and allow to remain, trephining if due injury to the skull, Turkish baths.

Formula.—Ammonii iodidi, 1 dr.; ammonii carbonatis, 1 dr.; ammonii bromidi, 3 drs.; sodii bromidi, 2 drs.; potassii bromidi, 3 drs.; potassii iodidi, 1 dr.; tinctura calumbæ, 6 drs.; aquæ, 6 ozs. Mix. Dose—2 drs.

Diet.—Avoid meat. Fats and oils are useful when faulty assimilation exists.

Epistaxis—

Acetanilid.
Acid trichloracetic.
Alum as solution for injection or as powder snuffed up into the nose.
Antipyrin as a local hæmostatic 5 to 15 per cent. solution arrests hæmorrhage.
Aristol.
Barium chloride.
Eucalyptus.
Europhen.
Ferric chloride with quinine internally.
Do. perchloride tincture—injection into the nostrils.
Ferric salt as oxypersulphate locally.
Do. sub-sulphate solution or liquor ferri persulphatis (1 to 50) or tinctura ferri perchloridi (1 in 25) as spray or nasal injection.
Ferropyrine.
Iodoformogen.
Iodole.
Lead acetate 2 to 5 grs. with opium ½ gr. internally proves very useful.
Supra renal extract internally.
Vinegar cotton or lint soaked and stuffed into the nostrils.

External remedies.—Blisters over the hepatic region, cautery, electric, if hæmorrhage is due to any ulcer in the anterior nose, cold water to the back, compression of the facial artery, cupping, head to be kept elevated, hot bag to the spine, hot foot-bath, ice over the nose and head, insufflation, legation of the extremities, plugging the nostrils, tampion into the nose, transfusion if danger from exhaustion is imminent.

Erysipelas—Phlegmon—

Acid boric as lotion.
Do. carbolic ½ dr., alcohol ½ dr., and water 2 ozs. hypodermically around the inflamed surface.
Do. carbolic and oleic acid (1 to 10) as an application round the inflamed surface or as inunction to relieve pain.
Do. picric locally 6 in 1,000 solution.
Do. salicylic 1, with oxide of zinc 10 and starch 25 locally.
Do. salicylic as lard with ointment or dissolved in collodion as paint.
Do. sulphurous with glycerin, locally.
Adeps preparata.
Alcohol as stimulant.
Alumnol.
Ammonium carbonate internally if feeble circulation, cyanosis, delirium or threatening embolism; useful in collapse.
Antifebrin or antipyrin when there is high fever.
Antiphlogistine.
Argenti oleate locally.
Argentum colloidale.
Bismuth oleate or the ointment to allay itching and burning pain.
Calomel with jalap in the onset.
Calx chlorinata.

Carbolized cotton wool.
Chloral hydrate as an adjunct to procure sleep.
Clay, yellow, free from sand or grit is a good application.
Collodion—a thick coating relieves the affection if superficial.
Cotton wool with flour or starch and zinc oxide is a useful application.
Creolin 10 with iodoform 4 and lanolin 10—a nice application.
Creosote, pulvis creosoti et amyli 10 ms. in 1 oz. as a dusting powder.
Egg plaster (*lep*).
Europhen locally.
Ferric salts as bromide, chloride tincture 30 ms. internally is nearest to a specific. It is also used locally as a paint over the surface with success.
Ferric sulphate lotion.
Ichthyol with collodion (1 in 5) as a paint; or ichthyol 5 with ether 5 and collodion 10 mixed with castor oil is a good local application.
Iodine solution as a paint round the margin and over the affected surface to prevent spreading.
Kieselguhr locally.
Lactophenin internally.
Lead carbonate or nitrate with glycerin locally.
Do. salts as acetate liquor and opium locally.
Lycopodium clay locally.
Mercury bichloride (1 in 1,000) as solution or as ointment 1 to 8 of vaseline is a very useful application.
Naphthol ointment locally.
Oil as inunction, applied locally.
Potassium iodide where quinine and iron have failed; also to keep the skin, bowels and kidneys free.
Salol internally.
Scarification.
Silver nitrate in traumatic cases 20 grs. to 1 oz. is very useful as a paint to subdue external inflammation after careful washing and drying.
Sodium salts as bisulphite, salicylate, benzoate, silicate, sulpho carbolate, used locally.
Starch powder locally.
Streptococcus antitoxin serum for injection.
Talc powder.
Tartar emetic gr. $\frac{1}{16}$ very serviceable.
Thermodin.
Thiol, dry, as a dusting powder, very useful.
Vinolia ointment.
White lead paint locally.
Triphenin.
Zinci oxide or benzoate as ointment, to exclude the air.

Formula.—Iodized collodion—containing pyroxilini 1 to ether and alcohol 40 each. To this add aluminio iodide 1, cadmium iodide ½ and cadmium bromide ½. Mix, as a paint locally.

External remedies.—Hot fomentations, ice if of limited area, incision if the limb is swollen.

Erythema Multiformi and E. Nodosum—

Acids, if due to indigestion.
Acid boracic, benzoic, or nitromuriatic; if digestion is imperfect, picric acid 6 to 1,000 solution as an application.
Adeps lanæ.
Albumen, white of egg—local covering.
Alum lotion as a wash.
Antipyrin internally to allay itching.
Bismuth subcarbonate as a dusting powder allays itching, soothes pain and promotes healing. Very useful in erythema about the genitals in children.
Cold cream locally.
Cupri sulphatis as lotion.
Emol locally as a dusting powder.
Ferri sulphate with magnesia sulphate and dilute sulphuric acid.

Hydrargyri oxidum rubrum—Ointment with unguentum picis liquida.
Ichthyol.
Kaolin—lotion or ointment.
Kiselguhr as a dusting powder.
Lycopodium, starch, buck wheat, &c., as lotion or dusting powder.
Menthol locally.
Plumbi oleas 10 per cent., 2 to 4 drs. in 1 oz. of cosminol locally.
Spirit rectificatus locally.
Tannoform locally.
Tar ointment with hydrargyrum oxidum rubrum.
Thiol, dry, as a dusting powder.
Vaseline.
Zinc oleate 10 per cent., 2 to 4 drs. of cosminol.
Do. salts as oxide with lycopodium locally—lotion or ointment.
Do. sulphate with alum and glycerin as lotion.
Do. acetate used as ointment.

Esophageal Affections—

Anæsthetics, as chloroform, &c., locally, to meet temporary indications.
Dilatation by bougies in cases of stricture.
Feeding through the stomach tube.
Leeches to the sternum to relieve pain or spasm.
Nutrient rectal enemata in stricture of the esophagus if swallowing is impossible.

Exhaustion, nervous and bodily—

Acetanilid, 3 to 5 grs., put into the mouth, mixed with saliva and swallowed, relieves tired feeling.
Acid hypophosphorous.
Alcohol, safe remedy in all conditions of fatigue.
Ammonia internally.
Arsenic.
Bromo hæmol.
Calcium phosphate, calcium carbonate and ferric phosphate, each 1 gr.
Coca.
Cupro hæmol.
Iron valerianate.
Kola.
Musk to relieve nervous exhaustion.
Phosphorus to relieve exhaustion or depression from overwork either of body or mind.
Potassium bromide to relieve irritability, to procure sleep, and to avoid bad dreams.
Do. cantharidate subcutaneously.
Sea-bathing.
Sodium glycerophosphate internally.
Do. hypophosphite internally.
Spermine.
Spirit ammoniæ aromaticus.

Exostosis, Periosteal Syphilitic Nodes and Periosteal Non-syphilitic Thickening.

Ammonium iodide in syphilitic periostitis.
Excision, if necessary.
Incision, free and deep, in periostitis, to relieve the tension or tendency to suppuration.
Iodine with mercury ointment for friction over nodes.
Mercury, internally if due to blows, or syphilitic.
Mercury ointment with pot. iodid. as friction.
Do. oleate with morphine externally.
Potassium iodide to promote absorption, internally or locally as ointment.
Poultices if suppuration takes place.
Stimulants.
Tonics.

Eye Diseases—

Acetanilid in optic neuritis. It relieves the pain and arrests inflammatory process.

Acid boracic solution (1 in 120) in conjunctivitis.

Do. carbolic 1 per cent. solution, for warts about the eyelids.

Alum with milk (alum curd) locally.

Amyl nitrite, in amblyopia as inhalation.

Argenti nitras, locally in corneal ulcers, conjunctivitis, and tinea tarsi.

Arsenic in strumous ophthalmia, internally and in drops.

Calomel insufflation in corneal ulcers and internally.

Carbonate of lead (1 to 4) in blepharitis.

Chloroform vapour applied close to a photophobic eye.

Copper salts as nitrate, sulphate, &c., a weak solution for conjunctivitis.

Croton chloral externally in photophobia.

Ephedrine hydrochlorate.

Emmenagogues in photophobia if due to menstrual disorders.

Ferri iodid, dyalised iron and other iron preparations in amaurosis.

Guaiacum. In rheumatic cases (1104).

Iodoform with unguentum petrolei to the lids.

Mercury oleate with morphine locally. In syphilitic iritis, palpebral conjunctivitis and stye applied outside the eye.

Mercury *bichloride* solution in purulent ophthalmia.

Mydrine.

Nitroglycerin very useful in defective vision.

Phosphorus to disperse corneal spots, to relieve amblyopia.

Potas. iodid if due to syphilis.

Protargol.

Rubidium iodide in syphilis.

Salicylic acid, internally in iritis with rheumatic tendency.

Sodii benzoas 20 per cent. solution in purulent ophthalmia.

Do. biboras with sodii carbonas solution (1 in 50) as collyria in cases of granular lids.

Do. chloridum (1 in 40) solution as wash.

Sozoiodol salts.

Zinc salts, weak solution for conjunctivitis.

External remedies.—Bandage or compress to the eyes, blisters to the temple behind the ear or to the nape of the neck, electricity, leeches to the temples or behind the ears, setons to the nape of the neck.

Formula.—Sodii biboras with sodii carbonas solution (1 in 50); cadmium sulphate 2 grs. to 1 oz; alum (1 in 75); tannin, borax or acetate of lead (1 in 250); zinc sulphate alone (1 in 25) or with morphine and atropine solution, used as collyria.

Stimulant application as drops or solution.—Zinc sulphate, cupri sulphate, argenti nitras, vinum opii, &c.

Escharotics locally, as nitrate of silver, sulphate of copper, alum.

Antiseptic ointment.—Ungt. hydrargyri nitrates, 3 grs.; hydrargyri oxidi rubri, 3 grs.; acidi arseniosi, ½ gr.; oleum amygdalis, 10 ms., with vaseline 1 dr.

Counter-irritants.—Liquor ammonia (to rub to the temple), tincture of iodine, tincture of capsicum, blisters.

Eyelids—

Ammonium chloride in solution as lotion for black eye.

Cadmium sulphate 2 grs. to 1 oz. of water as lotion or collyrium.

Calomel locally.

Citron ointment as an application.

Mercury and morphine 20 per cent. with lard for application outside the lids for stye.

Zinc sulphate as drops or lotion.

Favus—

Acids as boric—carbolic, salicylic, or sulphurous as parasiticide, to relieve itching.
Cod-liver oil.
Copper oleate.
Gaduol.
Liquor carbonis detergens.
Mercury oleate as parasiticide.
,, bichloride 2 grs. to 1 oz. as lotion.
Myrtol as parasiticide.
Naphthalin.
Oils to rub to get rid of scabs.

Fever—

Acid.
,, carbolic as antiseptic.
,, hydrochloric dilute given in simple continued fever and in typhoid fever to relieve dryness of the mouth and fauces, to promote appetite and check diarrhœa, as in exanthemata.
,, nitric dilute during convalescence.
,, phosphoric dilute as a cooling drink.
,, picric 1 per cent. solution in ague. Dose—½ dr.
,, salicylic as an antipyretic, useful in hyperpyrexia of intermittent, in septicæmia, pyæmia, rheumatism and surgical fevers.
Alcohol during adynamic stage and in low conditions.
Alkalies. To increase urinary solids.
Ammonia and its salts during the adynamic stage.
Ammonii picras, ½ to ½ gr.
Ammonium acetate as a diaphoretic in catarrhal fever.
,, benzoate 15 grs. for scarlet fever.
,, carbonate—in the typhoid stage, in scarlet fever and in measles.
,, picrate. Dose—⅓ to ⅔ gr. during intermittent or malarial fever.
Antimonii oxidum and sulphuratum.
Antipyretics as acetanilid, antipyrin, chinolin, kairin, phenacetin, thallin, &c., are used as antipyretics and diaphoretics, to reduce the temperature and moderate the intensity of fever and are best used in persistent hyperexia, especially in pneumonia, typhoid, and other fevers.
Arsenic. In febricula, malarial, intermittent and in typho-malarial fevers and in prostrating acute fevers it invigorates the patient.
Baths—warm bath.
Benzanilide, 3 to 10 grs.
Bitters with acid drinks to quench thirst.
Bromides excellent for febrile disturbances in children.
Bromopyrin.
Calomel and jalap to relieve hepatic congestion given at the commencement.
Carbolate of iodine. In typhoid fever and in chronic malarial fever.
Chloral hydrate. In delirium, wakefulness and to reduce temperature.
Chloroform with whisky during ague.
,, with spirit before chill or by inhalation.
Cacodylate of sodium. In chronic cases.
Eucalypti folia, infusion in remittent fever and later stages of typhoid.
Guaiacol internally and locally as inunction 1 to 8 of olive oil.
Hot bath, hydrargyrum cum creta with rhubarb and quinine in children.
Hydrargyrum cum creta with rhubarb and quinine in fever in children.
Iodine tincture in drop doses.

Kairin an efficient antipyretic, but a cardiac depressant and powerful diaphoretic. It is dangerous in pneumonia and in fevers with weak heart. It also causes gastric disorders.

Milk.

Musk, given in collapse.

Phenacetin as an antipyretic is efficient and safe in simple continued fever.

Potassium bitartrate and sodium tartrate. Purgatives before exhaustion sets in.

Refrigerant drinks.

Resorcin in 3 to 8 gr. doses as an antipyretic and antiseptic. Given in acute rheumatism, typhoid fever, pneumonia and erysipelas; may be used hypodermically as it is non-irritant.

Salicin in rheumatic fevers with high temperature.

Salol 5 to 15 grs. to bring down the temperature.

Sodium salicylate, in hyperpyrexia, in septic pyæmic fevers and in intermittents.

Spiritus etheris.

,, ,, nitrosi.

,, vin. gallici.

Sulphonal, if there is delirium or restlessness 10 to 20 grs.

Sulphate of magnesium as a purgative in the early stage.

Tartar emetic $\frac{1}{10}$ gr. with opium as a diaphoretic, given in acute fevers, ague, delirium and to abort specific fevers.

Thermifugin, to reduce the temperature and to reduce the pulse rate.

External remedies.—Baths (hot and cold), blisters if comatose, cold application, packing, effusions in acute fevers and during retrocession of a rash in exanthema, fomentations, hot and cold compresses, ice pack, moist inhalations, refrigerant drinks, sponging, warm sponging, wet sheet packing, sea voyage in low fever when very obstinate.

Diet.—Milk, gruel; bland, unstimulating and liquid food.

Fistula and Sinuses—

Acid chromic locally.

Bismuth oxyiodide after operation as a dusting powder on indolent ulcers to stimulate granulations.

Chlorine water.

Glycozone as an enema (1 in 8 drs. of luke warm water) in anal fistula.

Iodine injection.

Iodoform as a dusting powder.

Operations—*excision* of the sphincter by knife or ligature in anal fistula; *dilatation* of the canal by probang or slitting open of the canaliculus in lachrymal fistula; or *sutures* as in vesico-vaginal and recto-vaginal fistula.

Turpentine oil for injection.

Diet.—Nourishing, digestible.

Flatulence—

Abstention from sugar, starchy food and tea.

Acid, carbolic, as a sedative checks flatulence.

,, phosphoric dilute—a nice remedy to alleviate flatulence.

,, sulphurous if flatulence is due to fermentation 5 to 10 ms.

Alkalies before meals.

Ammon carbonas, 3 to 5 grs.

Amyl valerianate.

Avoid sugar, starchy food and tea.

Bidlavana.

Calcium saccharata, 8 to 20 grs. as an antacid.

Carlsbad waters to relieve hepatic congestion.

Carminatives to promote expulsion of gas from the stomach and intestines—anise oil, ether, &c.

Charcoal 5 to 10 grs. mixed with bismuth before and after meals gives relief.

Chloroform in drop doses gives relief in flatulent dyspepsia.
Creosote.
Ether in nervous hypochondriacal form.
Hot water between meals.
Ingluvin or pepsin after meals to promote digestion.
Lavana tratyadi churan.
Mercury if sluggish liver and clay-coloured stools.
Potassium permanganate in flatulence due to obesity.
Sodium carbonate.
" chloride.
" hyposulphite, used in sarcinæ ventriculi.
" sulpho carbolate 30 grs. after meals.
Sonchal.
Spiritus ether is nitrosi.
Strontium bromide and strontium-lactas in flatulence due to decomposition.

Diet.—Avoid sugar, starch, tea; also alcoholic drinks. Vegetables—as cabbages, *dodhi*, *kdkri*—are interdicted. Eat slowly and little; hours for food should be regular.

Fractures and Dislocations—

Acid carbolic (1 in 40) as a lotion for irrigation in compound fracture to avoid pyæmia.
Anæsthetics—chloroform, &c.—to relax the contracted muscles.
Antiseptic dressings and gauze.
Calcii glycerino-phosphas, 3 to 10 grs. internally promotes formation of callus or phosphorus in the organism.
Fixation apparatuses—perfect rest.
Iodine as an antiseptic internally and locally as a friction in cases of disunited fractures.
Iodoformogen.
Lead liquor and opium as a lotion on lint to the part to relieve the pain after reduction.
Mercury bichloride (1 in 500) as lotion.
Phosphate of calcium, internally, quickens union.

Freckles—Sunburn—

Acid.
" citric lotion with ferri sulphas and camphor.
" hydrochloric dilute locally.
Alkaline lotion.
Ammonium chloride lotion (1 in 12).
Borax as a saturated solution used as a lotion to remove freckles.
Iodine tincture alone or with glycerin applied locally.
Lime water with liquor ammoniæ and olive oil as a liniment to remove freckles.
Liquor potassæ 1 to 16 of rose water as a lotion.
Mercury bichloride (1 gr.) with alcohol and glycerin (1 oz. each) is used locally as a lotion.
Potassium carbonate as a lotion for freckles, sunburn and dark spots.
Resorcin with zinc oxide as paste applied to the face to remove freckles and other spots.

Gangrene—Gangrenous Wounds—Hospital Gangrene—Senile Gangrene—Gangrene from Embolism—

Acetum locally.
Acid carbolic as a local caustic or dressing to promote healthy action for ulcers; the solution (1 in 100) as otion in senile gangrene and in gangrenous ulcers.
Acid chromic, useful as an escharotic penetrates deeply, but does not cause much pain.

Acid lactic with butter-milk, as a wash.
„ **nitric**, best escharotic, very useful to destroy gangrenous tissue, better than bromine. Should be applied carefully until the ulcer is converted into a dry mass.
„ **salicylic** applied locally to destroy fœtor and improve the morbid action.
Alum and acetate of lead as lotion.
Ammonium chloride in solution as baths and fomentations in senile and other gangrene.
„ carbonate internally.
Boroglyceride soap.
Bromine alone as an escharotic for hospital gangrene, with potassium bromide as a lotion.
Camphor powder locally.
Charcoal poultices very useful.
Chlorine water. To destroy fœtor.
Creolin.
Creosote.
Eucalyptol camphor. To lessen the fœtor in gangrene of the lungs.
Helenin antiseptic (1 in 1,000), to arrest putrefaction.
Hydrargyri nitratis liquor, as lotion.
Iron salts, as the perchloride tincture, with quinine and chlorate of potash internally; persulphate as lotion.
Lime juice and chlorine water as disinfectant.
Nitro-glycerin. For thrombosis.
Oxygen gas gaseous bath in senile gangrene.
Potassium salts, as the permanganate and the iodide, if syphilis be present.
Resorcin as an antiseptic and antipyretic.
Saccharum as dusting powder.
Sanitas oil.
Sodium sulphate solution (1 to 10) of water used as a lotion to destroy fœtor, to relieve pain, and to restore healthy action.
Zinc chloride, locally or as lotion.

External remedies.—In chronic cases.—Acid tannic ointment, alcohol and water as injection (1 to 2), argenti nitras as ointment locally, bismuth 1, glycerin 1, and water 6, as injection, blisters to the perineum of great benefit, calomel ointment, catheterism, counter-irritation, copper sulphate solution as injection, copper acetate with lead acetate as injection, fresh air, glycerin, tannin and olive oil as injection, iron persulphate solution (1 in 12) as injection, iron perchloride 30 ms., tr. opium 60 ms. and water 500 ms. as injection, mercury bichloride (1 in 500) as injection.

Gastric Dilatation—Distended Stomach—

Absorbents.
Acid, carbolic, internally, to allay fermentation and as a wash for the stomach by stomach pump.
Alkalies.
Aperients.
Bismuth salicylate as an antiseptic given internally.
„ **subnitrate** with lime water or magnesia or soda to relieve acidity.
Calcium lactophosphate.
Charcoal internally.
Chloroform spirit as sedative.
Creosote.
Emetics.
Enema nutrient.
Faradization of gastric walls.
Lavage.
Lime water to avoid acidity.
Massage.
Menthol.
Resorcin.
Saccharine.
Salophen. To relieve fermentation.
Sodium phosphate.
Strontium bromide.
Sulphur. To relieve fermentation.

Diet.—**Avoid starch**, sugar, vegetables of any kind, milk. Use dry food, **stale bread**, under-done meat, &c.

Gastritis, Acute—

Antidotes and antagonists if gastritis is due to irritant poisoning.
Bismuth subcarbonate or subnitrate with opium given after the acute symptoms have subsided.
Calomel in small doses internally.
Caffeine.
Demulcents.
Ice milk.
Lime water.
Mercury—calomel in small doses.
Sodium paracresotate, 2 to 10 grs. internally.
Warm water internally.

Diet.—Milk and lime water ; nutrient enemata.

External remedies.—Bandaging, blisters, cupping, enemata nutrient through the rectum, fomentation (hot water) to the epigastrium, ice to suck and locally to the stomach, leeches, stomach pump with care.

Gastritis Chronic—Gastric Catarrh—Chronic Dyspepsia—

Acid hydrochloric dilute.
Alum. To lessen glairy mucous vomiting.
Alkalies given before meals to increase the production of the gastric juice; after meals to neutralize the acids of decomposition.
Ammonium chloride acts very favourably.
Ammonol, 5 grs. as analgesic.
Arsenic. Internally 2 ms. of liquor arsenicalis given before meals. To check vomiting.
Bismuth salts, as the salicylate as an internal antiseptic is useful in chronic gastric catarrh ; subnitrate 10 grs. with arsenic 2 ms. given after food as a sedative and astringent, is useful in chronic gastric catarrh of children ; ammonii citras in catarrh of drunkards ; and phosphate.
Calcium salicylate.
Calomel.
Chloroform.
Creosote. Dose—1 m.
Creolin.
Glycozone. In chronic gastric catarrh due to alcoholism and to other causes.
Hot water.
Ichthalbin. Internally.
Iron dyalised.
Lead acetate with morphine to relieve gastric pain and pyrosis.
Mercury, yellow oxide, $\frac{1}{60}$ gr., is very useful.
Naphthaline with almond oil internally.
Orexine tannate.
Papain.
Pepsin 5 grs. after a meal to assist digestion.
Potassium.
,, bichromate $\frac{1}{8}$ to $\frac{1}{4}$ gr. with kaolin.
Resorcin is very useful.
Rest in bed.
Saccharin.
Silver salts, as silver nitrate with opium or belladonna is useful to check pain and vomiting.
Sodium benzoate or bicarbonate 10 to 40 grs., or paracresotate 2 to 3 grs.
Strontium bromide is very beneficial.
Zinc oxide or sulphate.

Diet.—Milk diet. Koumiss, butter-milk, arrowroot, in small quantities, such as could be digested in the small intestine. Avoid malt liquors, use mineral waters to drain the portal system.

Gastric Ulcer—

Acid carbolic as a sedative.
Argenti nitras in solution with belladonna and caryophylli, to check pain and relieve vomiting.
Arsenic, as liquor arsenicalis, is of benefit to lessen pain and to relieve vomiting, useful when other remedies have failed.
Beef tea with pepsin and hydrochloric acid to relieve indigestion.
Bismuth salts as oxyiodide, salicylate, subgallate, subnitrate, to relieve pain and vomiting.
Blood, defibrinated, for injection into the rectum.
Brandy with opium if the stomach is irritable.
Carlsbad salts before meals.
Cerii nitrate.
Charcoal prevents the formation of acid products and thus relieves the pain.
Chloroform 1 m. with water 150 ms. A teaspoonful given internally every hour gives relief even in obstinate cases.
Creosote.
Eucalyptus globulus.
Ferri albuminate, 3 to 5 grs., is very useful in anæmic cases.
,, et ammonii citras is very useful to check vomiting.
Ferrous lactate with sodii bicarbonas and acid tartaric if the stomach is irritable.
Glycozone in drachm doses with water given on an empty stomach is beneficial.
Hydrogen peroxide.
Iodoform, ½ gr. internally.
Lead acetate as sedative and hæmostatic : ½ gr. with opium is useful to check vomiting of blood and pain.
Lime water and milk.
Mercuric bichloride $\frac{1}{50}$ gr. internally as an antiseptic given before food is very useful.
Methylene blue.
Milk diet. Skimmed milk with lime water (2 to 1) succeeds admirably.
Monsel's solution.
Nutrient enemata with opium if the rectum is irritable, to give rest to the stomach.
Pancreatine or pepsin facilitates digestion and hence useful.
Peptonized milk gruel.
Potassii bichromas in pill with kaolin.
,, sulphis, 10 grs. for sarcinæ ventriculi.
Potassium iodide with cinchona and potassium bicarbonate.
Resorcin as an analgesic checks vomiting wonderfully.
Silver colloidal oxide is very efficient —does not stain the skin.

Formula.—Resorcin, 1 per cent.; boric acid, 1 per cent.; soap and warm water, 100 as an enema. Sodii sulphas, sodium chloride, sodium borate, sodium bicarbonate, 1 dr. to 1 pint. As a wash.

External remedies.—Cold and hot compresses to the epigastrium, counter-irritation, electricity, ice bag to the stomach to relieve pain and to check bloody vomiting, leeches, massage, rest in bed.

Diet—Should be non-irritating, easily digestible, in small quantities—starchy food, vegetables, rice, arrowroot, &c.

Glandular Affections—Lymphoma—Adenitis—

Acid carbolic 2 per cent. solution for injection into the substance of the gland is very useful.
Acid osmic iquor 1 per cent. solution hypodermically for goitrous swellings.

Antimony sulphide.
Arsenic bromide with aurum bromide in solution is useful in enlarged cervical glands.
Aurum salts are useful in enlarged and indurated cervical glands.
Barium chloride and iodide.
Blisters to scrofulous glands.
Bole armenian.
,, rubra.
Bone marrow.
Cadmium chloride and oleate in scrofula.
Calcium salts as calcium chloride, dose 3 to 10 grs., is given in strumous inflammation and suppuration; chlorinate, phosphate, sulphide, are given with benefit in hard swollen glands behind the angle of the lower jaw.
Cod-liver oil.
Cupri sulphate.
Donovan's solution.
Electrolysis, interrupted faradic current to remove indurated gland from the neck.
Extirpation of limited area.
Ferrus iodide syrup, internally, very useful.
Friedrichshall water.
Hydrargyri iodidi rubri ointment as an application in goitre and enlarged spleen produces good results.
Hydrargyrum cum creta ½ gr. is useful.
Iodides in simple hypertrophy. It is useless if caseation or suppuration has set in.
Iodine locally applied in simple hypertrophy and used as injection in cystic and glandular growths in the neck.
Iodoform in enlarged, scrofulous and other glands.
Lead iodide is used as an ointment.
Mercury bichloride $\frac{1}{10}$ gr. is useful.
,, oleate with morphine in obstinate tonsillitis and inflammation of the lymphatic glands.
Morrhuol.
Organic extract.
Phosphorus and its preparations.
Plumbi iodide ointment in glandular swellings.
Potassium iodide internally or as ointment locally in scrofula, struma, in glandular enlargement of mammæ, testicles and thyroid body.
Sambersing.
Soft soap.
Sulphides when applied abort or promote suppuration in glands.
Thyroidin.

Formula.—Resin 40, catechu 16, cupri sulph. 12, bole rubra 20, alum 34, soap stone 32, butter q. s., to make ointment for swelled glands—fistula.

Bole armenian 2, nigella sativa 2, juice of occymum basilicum q. s. to make paste for swelled glands.

Glaucoma—

Bromides.
Chloroform.
Drainage of eye by cat-gut or gold wire is often successful.
Extract suprarenal.
Ichthalbin.
Iridectomy, the only remedy for the relief of glaucoma, always palliative, often curative.
Sclerotomy.

Gleet—

Acetum, vinegar.
Acid nitric dilute as injection.
Do. salicylic as an antiseptic 1 in 500 for injection.
Airol 10 per cent. as an emulsion, with glycerin locally.
Betol as bougies 1 to 4.
Cantharides in drop doses when there is pain and frequent desire to micturate, in anæmic subjects.
Donovan's solution, 10-m. doses, control discharge and acts as a cure.

Eucalyptol very useful in chronic urethral catarrh.
Gallobromol solution 2 to 4 per cent. as injection.
Iodoform 5 grs. and eucalyptus oil 10 ms. with theobroma 35 grs. as a bougie.
Iron perchloride tincture internally in anæmic subjects.
Mercury bichloride (1 in 500) as an urethral injection.
Potassium permanganate ½ gr. to 1 oz. as injection.
Silver phosphate as injection.
Zinc sulpho carbolate 2 grs. to 1 oz. as injection.

Glossitis—Inflammation of the Tongue—

Alum—dry powder used as a dusting powder on the tongue.
Antiphlogistic regimen.
Bismuth subnitras 20 grs. with glycerin 1 oz. and water 8 ozs. as lotion is very useful in erythema of the tongue.
Boracid acid and glycerin as gargles very useful.
Chromic acid 10 per cent. painting in chronic cases.
Gargles.
Incisions on the upper surface to relieve congestion.
Leeches in urgent cases beneath jaw.
Papain.
Pot. chlorate.
Purgatives.
Tracheotomy in urgent cases.
Water (hot) by vapour.

Glottis—Œdema of—

Alum 10 grs to 1 oz. of water as inhalation or as a spray.
Emetics if the œdema is slight.
Ethyl iodide by inhalation is of great benefit.
Inhalations of steam with benzoin or conium of great benefit.
Laryngeal tubation.
Potassium chlorate saturated solution—used as a spray.
Scarification of the affected part by a laryngeal lancet.

Gonorrhœa—

Abrak.
Aconite 1 m. in the early stage very useful.
Albargin.
Alcohol to be avoided.
Alkalies—citrates and bicarbonates with infusion of *Triticum repens* are very useful to render the urine alkaline.
Aluminium boro tannate in acute form.
Antimony potassio tart., small doses.
Bandharo.
Betal.
Bole rubra.
Bougies soluble of iodoform, eucalyptus, and cocoa-butter.
Cantharis drop doses in the chronic stage.
Cleanliness strictly to be observed.
Dextroform as antiseptic.
Ferric chloride tincture 10 to 20 ms. after the acute stage when the discharge is degenerating into gleet.
Fossil encrinite.
Hot bath.
Hydrargyri nitratis liquid acid 1 m. in 2 ozs. of water.
Hydrogen peroxide.
Iodine trichloride solution 1 per cent.
Lithium carbonate in 5 gr. doses given internally is very useful.
Naphthalol (1 to 4) as bougies.
Pakhan bhed.

Potassium acetate, bromide with bicarbonate internally; citrate, iodide in gonorrhœal rheumatism; carbonate 10 grs. with flax seed tea or alone about 10 grs. well diluted or with bromide and infusion of triticum if there is great pain; chlorate, nitrate, permanganate.

Rest in bed is essential, chiefly during inflammation stage.

Salol 5 grs. internally.

Urinating with penis in hot water.

Vichy water freely.

Warm water baths. Hot water to the penis during urination.

Zinc subgallas, 1 to 4 grs. internally.

Diet.—Milk diet.

Injections should be best avoided in the early stage; should never be used until the fifth week. Injections :—Sulphates of zinc, alum, copper or iron with water (1 gr. to an ounce).

Acids as boric 100, iodine tincture 150, glycerin 1,000, and water 1,000, useful in acute or chronic form.

„ carbolic (1 in 60) solution with tannic acid.

„ carbolic with acacia.

„ carbolic 4 with zinc sulphate 8, alum 6, and water 2,500.

„ sulphurous (1 to 15) solution.

Argentamine solution (1 in 4,000), more energetic than nitrate of silver.

Alum exsiccata solution.

Alumnol (1 to 3 per cent.) solution.

Antipyrin 100, corrosive sublimate 1, and water 10,000.

Argonin (4 per cent.) solution is less irritant and less efficient than silver nitrate.

Aristol ½ dr. to 1 oz. of cocoanut oil.

Bismuth oleate 5 ms. inserted on a sound or with mucilage used as an injection is of benefit in chronic form.

„ oxyiodate 1 per cent. solution.

„ salts as nitrate 1 in 10 of glycerin.

Cadmium sulphate 1 in 500 as an astringent injection.

Chloral hydrate weak solution 1 to 4 grs. to 1 oz.

Copper sulphate with lead acetate and morphia made in a solution and used.

Corrosive sublimate ½ gr. to 8 ozs. of water alone or with zinc chloride 1 gr. added to it, useful in subacute or chronic forms.

Creoline 5 per cent. solution.

Ferropyrin 1 to 2 per cent. solution.

Gallobromol 1 to 2 per cent. solution.

Hydrargyri bin iodide 1 in 10,000 or 2,000 of cosminol as solution.

Ichthyol, sulpho ichthyolate of ammonium 2 per cent. solution.

Iodoform 4, with carbolic acid 2, glycerin 6, and water 50.

Iodoform 10 grs. with eucalyptus 30 grs. to 1 oz. of cosminol used only in the later stage.

Itrol, an aqueous solution, is very beneficial. It soon decomposes.

Kaolin white clay with cosminol as urethral injection is beneficial.

Largin ¼ to 1 per cent. solution.

Lead acetate 3 grs. to 1 oz. with zinc sulphate. A dilute solution employed at any stage.

Mercury oxycyanide 1 in 2,000 as solution.

„ salicylate solution.

Port wine, Brandy water.

Potassium permanganate (1 in 1,000) solution to wash out the bladder or 1 to 2 per cent. solution as injection with potassium chlorate.

Protargol 20 per cent. solution in glycerin. Dose—5 to 10 drops instilled into the fossa navicularis after the suspected coitus or 1 per cent. solution will secure immunity from infection.

Pyridine in solution.
Resorcin 1 per cent. solution.
Silver nitrate 1 to 5 grs. to 1 oz.
,, lactate (1 in 2,000) solution.
Sodium fluosilicate (1 in 600) solution.
,, salicylate (5 grs. to 1 oz.) solution.
Sozoiodole sodium 2 per cent. solution.
Thalline sulphate 1 to 2 per cent. solution or 10 to 20 grs. in 1 oz. of cosmolin.
Zinc salts as chloride, a weak solution 1 gr. to 6 ozs. of rose water.
,, permanganate 1 in 2,000 as solution.
,, subgallas 1 in 16.
,, sulpho-carbolate 1 per cent. solution.
,, sulphate or acetate in solution 1 gr. to 1 oz. useful after acute inflammation has subsided.

Formula.—Creosote, 10 ms. ; hamamelis extract, 20 ms. ; hydrastis extract 20 ms. ; aquæ rosæ, 4 ozs. Mix. Injection.

2. Sulphate of zinc, 20 grs. ; acetate of lead, 20 grs. ; ammonium chloride, 15 grs. ; tincture opium, 2 drs. ; tincture catechu, 2 drs. ; water 6 ozs. Used as injection after acute symptoms have subsided.

3. Mercury bichloride, $\frac{1}{8}$ gr. ; zinc sulpho-carbolate, 30 grs. ; acid boric, 200 grs. ; fluid hydrogen peroxide, 4 ozs. Used as injection.

4. Zinci sulphatis, 3 grs. ; acid carbolic, 2 grs. ; ext. hydrastis, 6 grs. ; ext. belladonna, 6 grs. Mix for application as bougie in urethra.

Chandrodaya Rasa—Chandrodaya rasa—chandra the "moon" and oodaya "rising." The natives believe that particular diseases, such as sunstroke, gonorrhœa, syphilis, jaundice, &c., are due to excessive heat in the blood. In these cases their cure is effected by exposure to the cooling rays of the rising moon. To prepare it, triturate para kajali, refined abraka, banga bhashma, silajit, cardamoms, each one part ; add the juice of plantain leaf and make a pill mass. Dose—2 to 4 grs. As an alterative it is used in gonorrhœa, syphilis, jaundice, leprosy, &c.

Chandra Prabha Gutika.—To prepare it, take kuchala, vekhañd, moth, kariatu, gulavel, devadaru, halad, ativish, daruhalad, pipalimul, chitrak, dhânâ triphalâ, chavak, vâvadiñg, trikatu, sonâ mukhi dagadi bhashma, javakhâr, sajikhâr, panch lavana, each 1. To this add nishotar, dântimul, tamalapâtr-dâlchini, elchi, vanslochan, each 1 ; also loha bhashma and sâkar, each 4 parts, silâjit 8, and gugal 16. Mix and make a pill mass. Dose—5 to 10 grs. given in gonorrhœa and rheumatism.

Prameh Baddha Rasa.—Prameh, paramo means gonorrhœa and baddha to "check." This preparation is useful in curing or checking gonorrhœa. It is prepared thus :—Take parâkajali, loha bhashma, silajita, sonâ mukhi bhashma, suntha, miri, pipali, triphalâ, ankola chhâla, kotha (pulp), and halad each one part ; triturate the whole in the juice of bhangra, and make a pill mass. Dose —5 to 10 grs. Used as a powerful diuretic in gonorrhœa and scanty high-coloured urine.

Gout—
Acid arsenious.
,, muriatic dilute with cascarilla and colchicum.
,, sulphurous for fumigating bed clothes.
Alkalies. Lithium salts to relieve indigestion.
Ammonium salicylate better than sodium salt, as it acts quickly and efficiently.

Antipyrin. To relieve the pain, as prophylactic against future attacks.
Avoid wines.
Baths, Turkish, in chronic cases.
Calcii hippuras, solvent of urates 5 to 20 grs.
Carbonated water should be freely used.
Cathartics.
Cold water bandages.
Collodion, locally.
Diuretics and alkaline drinks.
Fel bovinum.
Gaduol.
Glycerino phosphate.
Hot moist flannel round the joints.
,, water drink.
Hunyadi Janos water.
Ichthalbin. Resolvent and alterative internally.
Iodide of potassium.
Iodine painted round the joints in chronic cases.
Iron iodide.
Lithium carbonate solution, 5 grs. to 1 oz. locally around gouty enlargement.
Lithium bromide internally.
Lycetol with piperazine, a useful solvent of uric acid.
Lysidin, a powerful solvent of uric acid, excellent results in chronic gout; it relieves exacerbations.
Magnesia carbonas dissolved in excess of carbonic acid gas has great repute.
Manganese with syrup of iodide of iron in 10-m. doses is useful in cachectic state.
Manna with vini colchici, potassii tartaratis and senna internally.
Moschus moschifera in retrocedent gout.
Oxygen is useful in cases of deficient oxidation.
Phenocoll with piperazine is given to relieve pain and fever.
Piperazine in 15-gr. doses in carbonated water or piperazine salicylate as a solvent for uric acid; it relieves paroxysms in acute form, reduces redness and swelling of the joints, and promotes elimination of urates and uric acid.
Piperidine bitartarate.
Potassæ liquor.
,, salts as acetate, bromide, iodide useful to alleviate nocturnal pains; permanganate and silicate.
Poultice, alkaline, linseed meal, with sodium bicarbonate.
Rubefacients.
Salicylate, large doses, to keep down diathesis.
Saliformin.
Sodium salts as salicylate in 10-gr. doses given internally, also as a lotion (1 in 40 on lint) in acute gout.
Strontium salicylate acts slowly.
Sulphur baths and waters benefit greatly.
Sulphides as baths in chronic gout.
Sulphurated potassa.
Tetra ethyl ammonium hydroxide solution internally.
Urea in large doses.
Water carbonated freely.

Diet.—Fresh vegetables, fish, eggs in moderation, meat lean without fat. Broth, milk, tea, coffee diluted. Bread, biscuits, alcohol, beans and peas and lentils should be taken in very small quantities. Fats, rich food, sauces, pickles, gravies, rich meat, cheese, pastry, sugar, spices, liquors and strong alcoholic drinks should be scrupulously avoided.

Granulations, Fungous Flesh—

Acid chromic.
Alumen exsiccatus.
Cadmium oleate.
Copper sulphate.
Potassium chlorate.
Resorcin.
Silver nitrate.
Zinc chloride.

Gums—Ulcerated Gums—Spongy Gums—

Acid boric 10 grs. to 1 oz. as a mouth-wash.
,, carbolic as a mouth-wash (1 in 150) of water in spongy and diseased gums.
,, salicylic.
Alum exsiccated with glycerin or honey locally in mercurial or scorbutic ulcerated or spongy or ill-conditioned gums, tending to recede from the teeth.
Calcium chlorinata.
Ferric chloride locally to the gums.
Glycerin with tannin locally for spongy and bleeding gums.
Iodine carbolate to avoid fœtor.
,, tincture or iodine solution (1 in 500) is an excellent application to the margin of the gums from retraction with loosening of the teeth.
Potassium chlorate 2 grs. in children in inflammation of the gums in teething.
,, iodide in 10-gr. doses in loose teeth, swollen gums and in painful jaw from inflammation of the periosteum of the alveolar processes.
,, permanganate.
Silver nitrate locally.
Sodium salicylate 15 grs. with belladonna tincture 15 ms. in inflammation of the gums with pain.
Zinc chloride, a saturated solution, is an astringent tonic and is applied by cotton locally to the margins.

Hæmatemesis—

Acid sulphuric dilute with gallic acid.
Alum is useful in passive hæmorrhage.
Antipyrin with cocaine internally.
Argenti oxidum.
Champagne.
Creosote.
Cupping, dry, to the trunk.
Enemata nutrient.
Ice to swallow and to apply externally.
Iron salts as *nitrate*; *perchloride* with glycerin, good results in passive hæmorrhages; *pernitrate*, 2 grs., very useful; *subsulphate* (Monsel's solution) is of benefit.
Lead acetate 1 gr. with morphia $\frac{1}{6}$ gr. is useful in cases of gastric ulcer.
Magnesii sulphas with alum and syrupus papaveris.
Mineral acids.
Mustard poultice.
Rest (perfect) to the stomach.

Hæmatocele-Pelvic—

Bandage to the abdomen.
Bromides; to quiet the action of the ovaries if hæmorrhage recurs at different periods.
Cold lotions to the abdomen.
Ferrous iodide, as syrup 20 ms., is an efficient remedy.
Hæmostatics as acetate of lead with opium.
Ice bags.
,, water as vaginal douche or injection.
Iodides. Syrup ferri iodide 20 ms.; to quiet the action of the ovaries.
Iodized cotton gauze locally applied to the cervix.
Iron and quinine as tonic while resolution of the extravasation is going on.
Leeches to be applied in the early stage in peri uterine hematocele inadmissible later on.
Mercury bichloride $\frac{1}{10}$ gr. with ergot and iron is useful.
Potassium iodide given with quinine and opium acts as an absorbent.
Rest in bed.
Tonics.
Vaginal injections of hot water.

Hæmaturia—

Acid acetic as an injection into the bladder checks alarming hæmorrhage, also given in cases of hæmorrhage after vaginal fistula and vesical operation.
„ carbolic with morphia to check vomiting.
„ sulphuric dilute alone or with gallic acid is very useful.
Alkaline baths.
Alum injection into the bladder (1 in 500) or internally.
Ammonium chloride. Dose—5 grs.
Ammonium benzoate 5 grs. in the albuminuria and hæmaturia of scarlatina.
Argenti nitras solution for injection into the bladder.
Cantharides tincture 1 m.
Ferrous chloride tincture 20 ms. given internally with good results.
Ice to the bladder or in the rectum or to the perineum in hæmaturia.
Plumbi acetas.
Spiritus etheris nitrosi.
Tannoform.

Hæmoglobinuric Fever—

Antipyretics are dangerous.
Avoid getting chilled or wet or overfatigued.
Blister to stomach and liver.
Calomel and jalap are a favourite remedy.
„ with opium stimulates bile and is very useful.
Camphorated oil as enema.
Chloral hydrate and potassium bromide as enema.
„ with jaborandi if coma or uræmic convulsions set in.
Chloroform internally in 5-m. doses to be followed by enemata of chloral.
Diaphoretics.
Diluents.
Fomentations to the loins if urine is suppressed.
Hot bottles to the feet and in bed.
Iron perchloride during convalescence.
Mercurial purge.
Milk diet till albumen has disappeared from the urine.
Sodæ bicarbonas. To stimulate bile.
Transfusion of blood if great anæmia.
Turpentine locally or internally.

Diet.—Milk till albumen from the urine disappears.

Hæmoptysis—Bronchial Hæmorrhage—

Acid phosphoric and acidulated drinks.
„ pyrogallic, in pill.
„ sulphuric dilute as an adjunct to other treatment.
Alum 10 grs., with morphia ¼ gr. and sugar internally, useful in atonic hæmorrhages.
Ammonium chloride with muriatic acid and decoction of hordei composita.
Antimony pot. tart.
Antiphlogistics.
Antipyrin internally and locally; solution or ointment to the chest.
Argenti oxidum.
Astringent inhalations, alum by atomizer.
Bromides.
Chloral hydrate given as a vasomotor dilator. It acts as a derivative and sedative, to allay excitement.
Chlorodyne.
Chloroform liniment to the chest.
Ferric salts as subsulphatis liquor by inhalation by atomizer. Ferric *Acetate* added to water and sipped is of benefit. *Nitrate, persulphate and perchloride* as spray are beneficial.

Hot water bag to cervical and upper dorsal vertebræ.
Lead acetate with opium is very useful.
Purgative in the early stage.
Rest, perfect.
Sodium chloride, 1 dr., repeated till nausea is produced, stops hæmorrhage.

External remedies.—Air inhalation, blister over the hepatic region, compress to the chest, diet antiphlogistic, hot water bag to the chest, cold externally, rest absolute.

Hæmorrhage—Haemorrhagic Diathesis,—

Hæmorrhagic diseases include dysentery, ecchymosis, epistaxis, hæmatemesis, hæmoptysis, hæmorrhage *post-partum*, intestinal hæmorrhage, menorrhagia, metrorrhagia, purpura and wounds.

Acid acetic or vinegar diluted checks hæmorrhage from fleabites, leechbites, piles, cuts, wounds.
,, sulphuric diluted acts as an internal hæmostatic, chiefly useful in uterine hæmorrhage.
Alcohol is useful to check hæmorrhage by elevating the arterial tension.
Alum 10 grs., with diluted sulphuric acid 10 ms., and sulphate of magnesia 2 drs. in atonic hæmorrhage. Useful in uterine and traumatic hæmorrhages.
Antipyrin 4 per cent. solution is a useful hæmostatic and constringe small vessels without causing any clot, checks general oozing from a bleeding surface.
Argenti nitras in bleeding from leechbites.
Astringents.
Bone marrow in endemic cases, if due to anæmia.
Brandy—wine very useful, when heart is enfeebled by loss of blood, due to wounds, when small vessels open.
Carbolized styptic colloid.
Cauterization.
Charcoal.
Cold.
Copper sulphate in sticks, solution or ointment to check hæmorrhage from small vessels, or internally ½ gr. with ferri sulphate 2 grs.
Creosote and alum in passive hæmorrhage, nasal, pharyngeal or dental.
Ferrum redactum. Ferri acetate in hæmorrhage of the lungs and kidneys.
Hot water checks locally by sponging the bleeding surface.
Ice internally in hæmoptysis or in hæmatemesis.
Iodoform.
Iron perchloride tincture 1 or 2 drs. acts as a styptic, or an excellent hæmostatic.
,, sulphate with collodion is used locally.
Lead acetate with morphia and acetic acid.
Ligation.
Nutrient enemata in hæmatemesis.
Potassium bromide and succinate.
Pressure over the bleeding points.
Rest, perfect rest is essential.
Sodii chloridum solution.
Stypticin.
Styptics.
Transfusion if death is imminent.
Tortion.
Venesection, to check pulmonary hæmorrhage.

Iodine 20 grs., potassii iodidi 60 grs., alcohol 2 ozs. Injection to subdue hæmorrhages from internal cavities.

Styptic Collodion.—Collodion 100, acid carbolic 10, tannin 5, benzoic acid 5. Mix. Apply locally to check hæmorrhages.

Plumbi acetatis 5 grs., digitalis pulveris 10 grs., opii pulveris 5 grs., confection of rosæ 15 grs. Make a pill mass. Dose—3 grs.

Hæmorrhage, intestinal, due to intestinal Ulcerations—Perforations—

Acid sulphuric is very useful.
Alum.
Bismuth oxyiodide.
Enema, styptic.
Ferric chloride.
Ice.
Iodine tincture 1 or 2 ms. internally in passive form.
Iodoform.
Iron.
Lead acetate as an enema is of great service.
Naphthalin.
Salol.
Silver nitrate.
Stypticin.

Hæmorrhage, Puerperal—Hæmorrhage, Post-partem—

A gauze dipped in acetum, vinegar and hot water, and used as intra uterine medication, acts as antiseptic astringent, and sufficiently irritating to produce contraction of the uterus.
Alum and acid tannic solution is useful in hæmorrhage due to wounds when small vessels remain open.
Amyl nitrite 5 grs. by inhalation acts promptly in stopping hæmorrhage.
Creosote. To swab the cavity.
Ether subcutaneously or by spray.
Ferri perchloridum (1 in 8) as injection, but should be used with caution.
Ferri sulphas solution used as a wash.
Iodoform gauze into the uterine cavity.
Iron, Monsel's solution, as an injection 1 to 3 of water.
,, perchloride diluted used as a swab.
Spiritus vini gallici, if much exhaustion.
Stypticin.
Tampon by absorbent cotton in hæmorrhage due to abortion or from placenta previa, but avoided in hæmorrhage after delivery.

External remedies.—Clots to be cleared, compression of the abdominal aorta, curette if the placenta is retained, faradization, firm grasping or contracting of the uterus through the abdominal parieties with a hand kept cold by immersion in ice to prevent hæmorrhage, firm pressure on the uterus, head lowered and feet raised, hot enema, hot water injected into the uterus is very successful, ice over the pubes or within the uterus or rectum as a prophylactic, injections intra uterine, introduction of hand into the vagina, mammary excitation—apply child to the breast or cupping glasses, pug into the uterus, salt water luke-warm ½ per cent. as rectal injection, sinapism to the extremities, transfusion or injection of milk instead of blood into veins in cases of collapse.

Hæmorrhoids—Piles—

Acid carbolic 3 with 1 of olive oil, hypodermically injected into the tumour or the solution 2 per cent. with creolin 1 per cent. used as a wash.
,, chromic locally.
Acid nitric strong as a caustic or diluted as a lotion, followed by free use of olive oil.
,, salicylic.
Alkaline mineral waters an excellent remedy.

Alum, camphor and opium local application.
Alum powder passed into the rectum or the ointment to painful bleeding piles.
Aluminis c. iodoform ointment.
Argenti nitrate.
Bismuth subnitrate or the liquor injection.
Calomel—ointment or as dusting powder.
Carlsbad salts.
Creolin solution 1 per cent.
Creosote ointment.
Ferri perchloridum tincture hypodermically into the pile. Dose—20 ms.
,, subsulphate 1 gr. internally or solution or as a wash or as an ointment, basic ferric sulphate 15 grs. to 1 dr., locally applied.
,, sulphidum.
Glycerin internally.
Iodoform 2 drs. with carbolic acid 4 drs., balsam peru and camphorated phenol 3 drs. Dose—3 to 6 ms., hypodermically. Iodoform ointment as suppository.
Lanolin.
Mercury bichloride (1 in 1,000) lotion.
,, ointment.
Petroleum ointment or petroleum soap when piles protrude.
Plumbi acetas solution, locally.
Potassium salts as *tartrate, bromide, chlorate.*
Saline purgatives, epsom salts with sulphuric acid.
Sulphides.
Sulphur 10 grs. internally with confectio sennæ 1 dr. is soothing in the early stage.
Thermocautery with care as it leaves behind fissures and ulcers.
Zinc sulphate with carbolic acid as wash.

External remedies.—Ablution with petroleum soap; anal rectal douche; bandage perineal; excision for external piles; ligature for internal hæmorrhoids; forcible dilatation of the anal sphincter; ice locally to bleeding piles or for pain after operation; incisions; injection of cold water every morning; injection of hot water; ligature for internal piles; leeches to swollen or irreducible and painful piles; poultices; thermocautery is useful, but apt to leave behind fissures and ulcers.

Diet.—Avoid stimulants, over-eating, undigestible food. Avoid soft seats.

Hemiplegia—

Bromides if there is organic lesion.
Calomel, if organic lesion exists.
Faradac electricity or static if hemiplegia be due to hysteria, applied to the muscles opposite those contracted.
Galvanism, constant current to the brain or cord.
Iodides to promote absorption when due to syphilis.
Massage if hemiplegia or paralysis be due to intracranial lesions leading to wasting, contracted muscles, cold skin, ulcerations, &c.
Potassium bromide 20 grs. or iodide 8 grs. if due to epileptic affection.
Purgative saline.
Spermine.

Hepatic Congestion.—Torpidity and functional derangements of the liver—

Acid nitric internally in chronic form will increase the flow of bile if due to excessive use of mercury.
,, nitro-muriatic is very useful.
Alkaline purgative waters, aërated, are very beneficial.
Ammonium chloride 20 grs. is very useful in passive congestion.
,, iodide internally if due to malaria.
,, phosphate.
Baths—nitro-muriatic acid baths.

Calomel.
Carlsbad salts and other bitter waters.
Chlorine water, 15 ms., is very useful in chronic cases.
Cholagogues or mercurial purgatives, useful in cases of excess or deficiency of bile.
Cream of tartar. In chronic cases.
Fel bovis.
Galvano puncture is useful if hydatids are present.
Hydrargyri bromidum in chronic cases.
,, iodidum rubrum ointment.
Iodides are useful in waxy liver and in chronic cases.
Iodine tincture locally in chronic cases after malarial attack.
Iron picrate. Dose—1 gr.
,, preparations are useful in amyloid liver.
Lithium carbonate.
Mercury blue pill or calomel internally or as iodide (red) ointment 2 grs. to 1 oz. used in enlarged liver from malaria or due to deficiency or excess of bile.
Ox gall.
Phosphorus has a specific action and as an antagonist useful in acute yellow atrophy.
Potassium salts as depurative are useful in hepatic torpor; as iodide with taraxacum or iodide with ferrous iodide given alternately in waxy liver.
Resin-bearing purgatives.
Rochelle salt.
Sodii taurocholas.
Sodium phosphate, sodium chloride, sodium bicarbonate is given as a cholagogue to children in jaundice and in hepatic calculi.
Sulphur and sulphurous mineral waters are very serviceable.

Formula.—Podophylin, ½ gr.; capsici, ¼ gr.; pulv. rhei, 4 grs. Dose—5 grs.

Diet.—Avoid starches or fats, also over-eating, alcohol in every shape should be forbidden. Beef and mutton use sparingly. Fruits to be taken very freely.

External remedies.—Cold water compress or belt round the abdomen; Friedrichshall water, massage; Pullna waters, Turkish baths. Free exercise to provoke perspiration.

Hepatic Cirrhosis—Hypertrophic Cirrhosis—Ascites, Hepatic Dropsy—

Acid, nitric, in long standing cases to increase the flow of bile after mercury.
Alkaline mineral waters given early.
Arsenic in small doses to improve nutrition of the liver.
Aurum and arsenic bromide $\frac{1}{10}$ grs. also aurum and sodium chloride $\frac{1}{10}$ grs. with sodium phosphate as a hepatic alterative.
Bromides.
Carlsbad salts.
Diuretics are useful.
Diuretin if dropsy exists.
Ferri iodide.
Friedrichshall waters.
Gold and sodium chloride.
Iodides are useful, as potassium iodide in the first stage.
Mercury, corrosive sublimate $\frac{1}{10}$ gr. given for a long time effects a cure.
Milk diet treatment.
Purgatives are very beneficial.
Sodii tauro cholas.
Sodium phosphate has power to retard the sclerosis, to arrest the changes and to restore normal function.
Tapping for the dropsy.
Urea.

Diet.—Milk; easily digestible food. Avoid starches, fats and alcohol.

Hepatitis and Hepatic Abscess—

Acid nitro-hydrochloric in chronic cases tending to abscess.
Alcohol to be avoided.
Alkalies with colchicum if the patient affected is gouty.
Ammonium chloride in 20gr. doses is very beneficial, often preventive.
Antimonii potassi tartras with nitre is of value in acute cases, with opium or calomel given early.
Calcii hydras locally.
Counter-irritation.
Iodine locally.
Potassium bitartrate and iodide in chronic cases.
Saline purgatives increase watery exudation from the mucous membrane of the intestines; sodium sulphate or magnesium sulphate is useful in acute cases.
Sinapisms.
Sodium benzoas.
Spirit etheris nitrosi with potassium citrate or other diuretics.
Sulphites are useful in chronic cases.

Diet—Should be low. Drink, fermented, to be avoided.

External remedies.—Aspiration early when pus forms; blisters; blood-letting; counter-irritants; hot clothes; leeches over the liver or round the margin of the anus in acute cases to unload the portal circulation; poultices (hot); rest in bed.

Hernia—

Anæsthetics.
Blue pill and tartar emetic for irreducible hernia.
Cold douche to the tumour with taxis will reduce the gut.
Chloroform inhalation is of benefit to assist reduction.
Cupping, dry, round the umbilicus.
Enema tabaci.
Enemata of ice water, chloral hydrate.
Ether and belladonna as spray or irrigation.
Ice bag to the tumour is of use if no strangulation of gut or omentum.
Inflation with air through long elastic tube.
Inversion from the feet.
Potassium iodide for irreducible hernia.
Refrigerant lotion.
Sternutatory or snuff, to cause sneezing while patient lies on his shoulders with legs and hips raised, is successful after taxis has failed to effect reduction.
Surgical operation, if necessary.
Thyroid extract to cause absorption of accumulated fatty material in the abdominal cavity should be given for weeks.
Truss is useful in reducible hernia; cures the disease by pressure of its block.

Herpes—

Acetanilid.
Alum 1 dr. to 1 oz. of water as solution if applied on lint on the glands in herpes preputialis.
Ammoniated mercury ointment.
Arsenic.
Bismuth subgallate or trisnitrate as dusting powder.
Calomel as dusting powder or as ointment (1 to 8) is very useful.
Collodion flexible with morphia as a local application to exclude air.
Copper sulphate ointment.
Ferri arsenias ½ gr. useful even in obstinate cases.
Glycerin diluted is a good application for herpes labialis.
Hydroxylamine hydrochloride, a solution of 2 grs. in 6 ozs. of spirit and glycerin.
Hydrarg. iodidum flavum.
Ichthalbin internally.
Ichthyol locally.
Iron arseniate.
Lanolin.

Lycopodium as a dusting powder.
Plumbi carbonas.
Potassium carbonate as lotion 1 gr. to 1 oz. allays irritation, or as ointment 20 grs. to 1 oz. applied over the eruptions at night followed by a wash of the lotion in the morning is very useful.
Thiol.
Vinolia.
Zinc iodide lotion (1 in 50).
,, sulphate as an astringent lotion in herpes preputialis.

Herpes, Zoster and Shingles—

Acid carbolic lotion.
,, picric lotion.
Alcohol menthol solution.
Baths.
Blisters if subsequent neuralgia.
Chloroform.
Collodion locally to exclude air.
Copper acetate.
Diet, nutritious, and in abundance.
Electricity to the affected intercostal nerves.
Exercise out of doors.
Galvanism to the seat of eruption or the affected intercostal nerves.
Hot fomentation is very useful to disperse.
Hydrargyri ammoniata ungt. to relieve pain and irritation.
Mercury-hydrargyri ammoniata as ointment to relieve the pain and irritation.
Phosphorus.
Rest absolute.
Saline aperients.
Silver nitrate, strong solution, as a paint on the erythematous patch as soon as vesicles begin to form.
Spirit of wine.
Starch. Dusting powder.
Traumaticin.
Vaseline.
Zinc oleate.
,, oxide ointment.
,, phosphide $\frac{1}{3}$ gr. with nux vomica $\frac{1}{8}$ gr. internally to control the pain and abort.

Herpes Tonsurans—Tinea Tonsurans—Ringworm of the Scalp—

Acid carbolic 2, glycerin 3, and water 3, locally.
,, sulphurous with glycerin.
Alkalies internally.
Arsenic iodide $\frac{1}{16}$ to $\frac{1}{8}$ gr.
Baths followed by shampooing and friction.
Borax saturated solution or with glycerin as paint.
Cleanliness.
Cod-liver oil locally.
Epilation if the affection is obstinate.
Ichthalbin as alterative tonic.
Iodine 1 with olive oil or oil of wood-tar 4 is useful to prevent extension of the disease.
Isolation of brushes, clothes.
Lead subacetate solution or with glycerin and water as lotion.
Mercury salts as bichloride, weak solution with boracic acid or the ointment 20 grs. to 1 oz. of lard; Donovan's solution internally; ammonium chloride 1 per cent. as ointment; oleate 5 per cent. as paint; iodide 2 per cent. as ointment.
Naphthalin soap.
Naphthol ointment.
Oils to remove scales.
Potassium sulphocyanide with glycerin 2 and water 25 as lotion.
Pyrogallol.
Sodium chloride and vaseline for rubbing until the skin becomes sore.
Sozoiodole mercury or potassium.
Sulphur 1 to 8 as ointment, with almond oil as inunction.
Sulphurated potassa 4 drs. to 20 ozs. of water as lotion.
Thyroidin as stimulant application.

Hiccough—Spasm of the Diaphragm—

Acid nitric dilute with tincture nux vomica.
Amber, oil of.
Amyl nitrite inhalation.
Antispasmin.
Baths.
Belt round the epigastrium.
Castoreum.
Chloral hydrate.
Chloroform combined with morphia, internally.
Deep inspiration by holding breath as long as possible.
Electric brush to the epigastrium.
Ether 20 ms. internally or as spray to the epigastrium is of benefit.
Fomentation, hot.
Ice internally.
Iodoform.
Massage.
Musk very useful.
Nitro-glycerin arrests the attack.
Peronin.
Potassium bromide.
Pressure over phrenic nerve, hyoid bone or epigastrium.
Spiritus etheris, 20 ms., internally with aromatic water.
Sugar and vinegar internally.
Sulphonal.
Violent mental impression.
Zinc valerianate ⅛ grs. and belladonna ¼ gr.

Formula.—Chloral hydrate, 1 dr.; potassii bromidi, 1½ dr.; potassii bicarbonatis, 1 dr.; liquor morphiæ sulphatis, 1 dr.; peppermint water, 6 ozs. Mix. Dose—1 oz.

Hydrocele—

Acid, carbolic, 30 ms., pure, with water or glycerin injected into sac, followed by rest in bed and support to the scrotum, but may cause hæmorrhage into the sac and erosion of vessels.
Alcohol injection.
Ammonium chloride as lotion if scrotum is inflamed; useful for children.
Electrolysis. Galvano-puncture with two needles.
Hydrargyri perchloride solution 1 gr. to 1 oz. for injection.
Ichthyol.
Incision of the scrotum under antiseptic precautions.
Iodine 1 with water 2 for injection into the sac after tapping.
Iron wire sutures to excite adhesive inflammation.

Hydrocephalus—Acute Meningitis, tubercular—

Calomel.
Ice to the head.
Iodide of iron and cod-liver oil internally.
Iodine lotions or inunction of iodine ointment to the scalp.
Iodoform with vaseline application to the neck and head.
,, dissolved in collodion to the scalp.
,, and calomel internally.
Leeches behind the ear or upon the forehead.
Magnesium carbonate with rhubarb as a purgative.
Mercury oleate as inunction or bichloride $\frac{1}{50}$ gr. to $\frac{1}{10}$ gr. internally.
Paracentasis after shaving the head.
Potassium bromide with potassium iodide, very useful.
Tartar emetic ointment as counter-irritant to the scalp also internally.

Hydrocephalus, chronic—

Cod-liver oil in scrofulous cases.
Diuretics.
Elixir of ferri quinine cum strychnia.
Ferrous iodide with cod-liver oil.
Glycerin with tincture iodine, locally applied.

Iodine lotion application to the head.
Mercury, calomel in small doses ½ gr. with mercurial ointment as inunction to the shaved head.
Potassium bromide.
Potassium iodide alone or with syrup of tolu to arrest the progress and to promote absorption.
Puncture through the fontanelles and inject iodine and iodide of potassium solution.

Formula.—Potassii iodide, 2 drs.; ext. scutellaria fluid, 2 ozs.; tinct. digitalis, 4 drs.; extract hyoscyami fluid, 4 drs. Mix. Dose—20 ms.

External remedies.—Blisters, adhesive strips for compression of the head.

Hydrophobia—

Acid carbolic.
,, hydrochloric.
Amyl nitrite by inhalation.
Calomel fumigation.
Chloral hydrate as enemata.
Chloroform by inhalation.
Iodine.
Mercury.
Nitro-glycerin.
Oxygen by inhalation.
Pepsin application to the wound.
Potassium bromide with chloral.
Silver nitrate cautery as neutralizer of specific poison and to prevent the wound from healing.
Sodii hyposulphis.
Wound cleaned and washed and kept open by basilicon ointment for 2 or 3 weeks.

External remedies.—Actual cautery of hot iron or caustic potash after cleansing to the wound; acupuncture; bandage round the limb to prevent absorption by the veins; baths (vapour); free excision of bitten parts; inoculation of rabies toxin; sucking the wound should be avoided; transfusion of blood.

Hydrothorax—

Blisters if effusion occurs.
Cupping, dry, over the chest gives relief.
Diuretin.
Iodine tincture injection after tapping.
Iron chloride tincture.
Mercury oleate as inunction.
Thoracentesis if much distress.

Hypochondriasis—a milder form of Melancholia—

Alcohol with care.
Antinervin.
Arsenic with opium gives relief in old people.
Auri et sodii chloridum $\frac{1}{10}$ gr. in depression, hypochondriasis accompanying cerebral anæmia or vertigo and in hepatic, testicular disease.
Dionin.
Electricity.
Fel bovinum.
Ferri hypophosphis.
Gymnastics.
Moschus moschifera.
Oxgall.
Paraldehyde, by the rectum.
Peronin with potassium bromide often useful.
Rest.
Sea bathing.
Spermin.
Sulphonal.
Turkish baths to relieve mental depression.
Walks, long.
Zinci valerianas relieves flatulence.

Hysteria—

Allyl tribromide.
Ammonia, aromatic spirit of—to relieve acidity and eructations.
Ammoniated copper.
Ammonium salts as bromide relieves the excited nervous system, improves nutrition; carbonate; valerianate of benefit.
Amyl nitrite.
,, valerianate.
Anæsthetics.
Antipyrin to relieve painful affections.
Antispasmin.
Antispasmodics.
Arsenic to lessen fits and to improve nutrition.
Auri bromide ⅛ to ¼ gr.
,, et sodii chloridum.
Avoid alcohol excitement.
Bromalin.
Bromide salts of calcium.
,, of potassium to control and prevent paroxysm.
,, sodium if verging on nymphomania.
,, strontium.
Bromipin.
Bromohæmol as hæmatinic and nerve tonic.
Castoreum.
Cerebrinin.
Cerii valerianas.
Chloral amide.
,, hydrate.
Chloroform.
Cod-liver oil.
Creosote.
Ether aceticus.
,, internally or as inhalation to relieve flatulence and sudden seizures.
Ethyl bromide.
Ferri bromidum, carbonas, perchloridi.
Ferro hæmol.
Ferrum redactum.
Gaduol.
Hypophosphites.
Iron sulphate if anemia or uterine obstructions exists.
,, valerianate.
Massage.
Musk to relieve anomalous and distressing symptoms.
Neurodin.
Orchitic extract.
Paraldehyde.
Phosphorus if paralysis supervene.
Spirit ammoniæ fœtidus for flatulent colic.
Spiritus etheris nitrosi to relieve spasm.
Sulphonal.
Trional.
Zinc iodide, oxide, sulphate, or valerianate at the menstrual epoch and climacteric.

External remedies.—Avoid the use of alcohol; avoid excitement; bath—shower or cold bath to invigorate the body and to educate the will; cold douche; cold water over the face; compress over the ovary stops the fits; electricity to relieve aphonia; paralysis and anæsthesia to educate nervous control; galvanism to the jaws; ice to the nape of the neck; occupation of mind and body; removal from influence of friends.

Headache (*a*)—Bilious-sick or Dyspeptic Headache—

Acetanilid in 4-gr. doses is effective.
Acid nitro-muriatic 10 ms., with chloroform, strychnine and ginger water before or during each meal is an effectual remedy.
Ammonium acetate liquor in sick headache.
Ammonium bromide, in hysterical and bilious variety.
,, chloride is a very efficient remedy.
Antipyrin in 8-gr. doses—a valuable remedy; it leaves no unpleasant after-effects. Should be given at the commencement of the attack.

Argenti nitras with compound colocynth pills in stomach headache.
Brisk saline purge of Epsom salts very effective for frontal headache.
Charcoal as a draught is effective in headache due to gastric flatulence and acidity.
Magnesia citras liquor.
Mercury as blue pill with rhubarb and hyoscyamus if given in light-coloured stools, stops headache.
Mercury bichloride $\frac{1}{100}$ gr. in headache with light-coloured diarrhœa.
Pepsine with animal charcoal.
Potassium bromide in large doses is useful.
Salol is very effective.
Sodii magnesii sulphas.
Sodium phosphate is used as a laxative to cure bilious-sick headache.
Water purgative mineral waters.

External remedies.—Water—cold or hot affusion. Ice bag to the head. Patient confined in a dark room.

Formula.—Ammonium chloride, 45 grs.; caffeinæ citras, 8 grs.; morphine acetas, ½ gr.; spt. ammon. aromat., 30 ms.; elixir guarana, 1 oz.; aquæ rosæ, 1 oz. Mix. Dose—2 drs. In bilious headache.

(*b*) Congestive—Nervous Headache—Hemicrania—Migraine—

Acetanalid 4 grs. is of benefit in headache due to fatigue.
Acid acetic as as lotion to the head.
„ hydrobromic.
„ nitro-hydrochloric in orbital pain.
„ phosphoric dilute 30 ms.
„ salicylic.
Alkalies.
Ammonia aromatic spirit. Dose—½ to 2 drs.
Ammonium salts as carbonate, 5 grs., in nervous headache.
„ as a diffusible stimulant, exceptionally useful.
chloride 10 grs.
„ valerianate.
Amyl nitrite by inhalation in headache with pallor of the face, or occurring at the climacteric period.
Antipyrin or acetanilid, grs. 5, for true migraine, very valuable, less so for the malarial or the dyspeptic form, useful in the uræmic form.
„ with caffeine and sodium bromide.
Arsenic liquor 5 ms. if there is supra-orbital pain in one brow. Like zinc, it is a nerve tonic.
Bismuth valerianate.
Bismuth subcarbonate 2 grs. after each meal if there is gastric disturbance.
Bitters.
Bromides are useful when the nervous system is irritated as in true migraine and in headache due to uterine disorders.
Bromalin 10 grs. as a nerve sedative.
Butyl chloral hydrate 3 grs. with gelsimin $\frac{1}{100}$ gr.
Calomel in small doses with ferri sulphate to relieve headache due to syphilis.
Chloral amide as a hypnotic.
„ hydrate—enema.
Chloroform spirit 10 ms. internally.
Croton chloral. Dose—15 grs. In milder forms and if no vomiting.
Eau de cologne and camphor rubbed on the head in uterine headache.
Ether spray where frontal headache is due to fatigue or acute illness.
Euphorin 3 to 6 grs. as an analgesic.
Eucalyptus, in cases due to cerebral anæmia.
Exalgin useful in migraine.
Fel bovinum.
Ferropyrine.
Friedrichshall waters.
Gold bromide in migraine.
Hydrocarbons.
Lithium bromide.
Magnesium salts as carbonate, citrate and oxide.

Methylene blue.
Neurodin.
Nitrite of amyl inhalation.
Nitroglycerin.
Oxygen waters.
Paraldehyde ½ to 1 dr. as a sedative.
Phenacetin in 2-gr. doses with caffeine citras is very useful.
Phosphorus as dilute phosphoric acid ½ dr. dose is very useful.
Potassium bromide 20 grs. to relieve nervous irritation and in the continuous or paroxysmal form; to be avoided if nervous system is exhausted.
„ cyanide locally in reflex headaches as gastric, pulmonary, menstrual, &c.
„ iodide 10-gr. doses if rheumatic with tenderness of the scalp, unbearable pain, severe and shooting from the back of the neck to over the vertex and the eye-brow.
Potassium nitrite.
Purgatives in persons of phlegmatic habits or suffering from suppression of hæmorrhoidal discharges.
Raspail's ear sedative, locally useful when due to uterine disorder.
Sambersing locally.
Seidlitz powder.
Silver nitrate, ½ gr. dose, in stomach headaches.
Sodium chloride if attended with gastric disturbance is very useful.
„ chloride with spirit camphor and liquor ammonia (1 in 20).
„ salicylate in neuralgic headache.
Strontium bromide.
Tea.
Zinc oxide, 2 grs., is of great value.
„ phosphide $\frac{1}{10}$ gr. in pill is very useful.

External remedies.—Acupuncture—needle run down to the cranium, avoid sugar and starchy food, bandage (tight) over the forehead and wet pads over the temporal arteries, baths—hot foot-bath, mustard foot-bath, leeches to the temples or back of ears, bleeding or leeches to the temples, cold affusion over the forehead, cupping to the nape of the neck, dark room, electricity, ether spray for frontal headache after acute illness or fatigue, hot sponging, hot water bag, hot bottles to the head and neck, ice bag to the head, poultices to the neck, skull-cap, spectacles.

Formula.—Ferri sulphatis, 2 grs.; magnesii sulphatis, 6 drs.; acid sulphuric aromatic, 20 ms.; tinct. cardamomi comp., 30 ms.; aquæ menthæ piper., 1 oz. for one dose.

2. Ferric chloride tincture, 1 dr.; hydrargyri bichloride, ½ gr.; arsenic chloride liquor, 1 dr.; acid hydrochloric dilute, 4 drs.; aquæ, 8 ozs. Dose—4 drs.

(*c*)—Rheumatic or Gouty Headache—

Acid nitro-muriatic with infusion of calumba.
„ sulphuric aromatic.
Avoid meats.
Nitrogenous food to be freely used.
Potassii bicarbonatis.
„ chloratis.
Sodii phosphas.
Sodium salicylate 10 grs. in neuralgic headache in gouty subjects.

Locally—chloroform liniment, belladonna liniment, opiate liniment, mustard plaster.

Hearing—Hearing may become defective, or much more acute, or may be so disorganized as to make subjective nerves to produce hearing very unpleasant, as humming, buzzing or ringing.

Many medicinal drugs are reported to cause these defects.

Quinine taken in large doses causes ringing in the ears and even temporary deafness. In some rare cases permanent injury to the faculty of hearing is believed to have been produced. Antipyrin salicylate is supposed to produce unpleasant noises. Strychnine and morphine make that faculty much more acute. Hydrobromic acid, bromides and ergot prevent unpleasant noises.

Heart Affections—

Alcohol or brandy when the heart is weak from fright or from loss of blood.

Ammonium carbonate, to prevent fibrination of blood.

Amyl nitrite in fatty heart to relieve heart's pain; in dilated heart to relieve dyspnœa.

Arsenic in cardiac dyspnœa.

,, with iron and strychnia is given for dyspnœa from weak heart; in cardiac hypertrophy to relieve syncope; in cardiac neurosis accompanied by pain.

Barium chloride in cardiac failure.

Bromides of potassium and iodide with digitalis in fluttering heart with irregular beats, in hypertrophy, dilation and in palpitation.

Chloral hydrate only useful in neurotic heart in palpitation and in pseudo-angina pectoris; also in valvular heart disease with potassium iodide.

Ether, 20 ms., a prompt stimulant hypodermically in sudden heart failure.

Erythrol tetra nitrate.

Haffman's anodyne in 1-dr. dose useful in urgent cases.

Iron is given in anæmic disorders with palpitation, in heart dilatation and in fatty heart with mitral regurgitation.

Nitro-glycerin tablets or solution 1 per cent. hypodermically in cardiac failure.

Potassium iodide alone, or with digitalis, convallaria and chloral hydrate, an efficient remedy in cardiac dyspnœa due to concompensatory, mitral or myocardial diseases and in fatty or weak heart. It restores energy and vascular tension at first, then later on acts as a dilator of the arterioles; it nourishes the heart, frees it from resistance, and recovers its contractile power. It dilates the coronary arteries and thus nourishes the heart.

Sodii benzoas with caffeine internally or hypodermically.

Spiritus etheris compositus to relieve sudden attacks of cardiac pain and dyspnœa.

External remedies.—Avoid heavy meal, avoid undue sexual intercourse, baths—saline baths, blisters flying or repeated blisters over the heart are good in cardiac dyspnœa and in very weak heart, chloroform inhalation in cardiac dyspnœa, cupping in cardiac dyspnœa due to dilated heart, ethyl iodide as inhalation, exercise gentle and gradual in cardiac dilation due to overwork or worry, oxygen inhalation in dyspnœa, rest in bed, sinapism to the cardiac region.

Heart, Dilated—

Diuretics if dropsy exists.

Mercury—Hydrargyrum cum creta 1, with pulvis scilla v, and digitalis leaves pulv. 1. Dose—5 grs. Given as a diuretic in cardiac dropsy.

Potassium salts, as the acetate, nitrate, iodide, bitartrate.

Purgatives, brisk and free.

Spiritus etheris compositus to allay dyspnœa.

Heart, fatty—

Arsenic.
Avoid climbing hilly places.
Cod-liver oil.
Iron chloride. The tincture is used in small doses with benefit.
Stimulants to be freely given.

Heart, Hypertrophy of—

Amyl nitrite for syncope or dyspnœa.
Avoid violent exercise, excess of venery or alcohol.
Bromides.
Exercise should be moderate.
Galvanism.
Gin.
Iodine tincture.
Iron if anæmia exists.
Lead acetate with opium and confection of roses in hypertrophy with violent palpitations.
Potassium iodide in small doses.
Rest in bed.
Spiritus etheris nitrosi.

Diet.—Avoid fattening food, stimulants, and meat.

Heart, irritable, due to Over-excitement—

Habits to be avoided.
Hoffman's anodyne.
Iron perchloride.
Rest, quiet life.
Zinc oxide.

Heart, Palpitation of—nervous or functional—

Acid hydrobromic dilute.
Ammonium carbonate.
„ valerianate.
Bromides in fluttering heart.
Chalybeate waters.
Fowler's solution.
Ice to the cardiac region is of benefit.
Iron if palpitation is due to anæmia, to excess of tobacco, coffee, tea, venery, dyspepsia, or violent exercise.
Milk cure.
Sodium bromide with quinine.

Diet.—Milk diet.

Avoid mineral waters, mineral baths, venesection, cauterization, blistering-tonics.

External remedies.—Cold application, electricity to the sympathetic and pneumogastric and cervical nerves, hot foot-bath, pressure on the carotids and the pneumogastric, rest in bed.

Heart, Valvular Disease of—

Arsenic with digitalis.
Barium chloride $\frac{1}{10}$ gr. as a diuretic, or as a heart tonic. It lessens cardiac pain, and increases tone of the vessels.
Iron chloride tincture or iron acetate is useful in cardiac dropsy.
Nitroglycerin internally and as solution hypodermically to relieve cardiac pain, to lessen blood pressure and diminish resistance the heart has to overcome.
Purgatives in engorgement of the right side of the heart.
Sodium salicylate.
Zinc sulphas 2 grs. in mitral disease.

External remedies.—Cupping in the early stage, ice bag to relieve local pain, leeches in the early stage; poultices. Avoid emotions; give diuretics, purgatives, rest; venesection in aortic disease.

Heat Stroke—Thermic Fever—Insolation—Sun-stroke—

Antipyretics to be avoided as they depress the heart.

Brandy with atropine, camphor or ether hypodermically.
Bromides if there is restlessness and insomnia.
Chloroform by inhalation with care if convulsions occur.
Hot bottles to the feet.
Nitro-glycerin hypodermically.
Potassium bromide internally or by enema.
,, iodide if persistent headache.
Sedatives if the pulse is strong and full.
Stimulants, internally or by the rectum if the pulse is feeble or frequent.
Tonics.

External remedies.—Ammonia internally or by inhalation held to the nostrils or by the rectum or hypodermically; artificial respiration when breathing becomes suspended; avoid alcohol as cerebral symptoms suggest meningeal congestion or inflammation, bleeding in venous congestion, blisters repeated to the nape of the neck and scalp, bowels kept free, douche or affusion of cold water if there is unconsciousness, enemata of stimulants, external stimulation in asphyxia as hot bottles to the feet, by injection hypodermically, nitroglycerin also pure, brandy, camphor or ether, free air, change of climate, hot foot-bath, ice packed round the head, chest, abdomen, relieve unconsciousness, ice spray to the forehead, iced water dropped on the body, leeches if the reaction is high, loose clothes, oxygen inhalation, packing wet sheet, rest, wet sheet.

Hectic Fever—

Antipyrin in 5-gr. doses just before the paroxysm is useful in the hectic of phthisis.
Calcium phosphate is very useful.
Ferri compound mixture useful in anæmia.
Ferric chloride tincture abates fever and diminishes sweats.
Ferric sulphatis is of value.
Phenacetin is very efficient.
Phenacoll a good antipyretic, used with great success.
Salicin as an antipyretic is useful to lessen sweats.

Ichthyosis—

Baths, warm baths, alkaline and vapour baths.
Cod-liver oil as an inunction is very prompt and beneficial.
Copper sulphate 10 grs. to 1 oz. of lard and sumbuci ointment as an application.
Inunction of oil to prevent fissuring of the new skin.
Lanolin or soft soap as friction.
Oil, linseed, cod-liver oil, &c., used as inunction.
Sodium bicarbonate ½ dr. to 1 oz. as ointment, or 2 drs. to 1 pt. of water as a lotion.
Thyroid extract is used with benefit.
Zinc oxide with camphor and glycerin as an application.
,, sulphate 1 dr. to 1 oz. of lard as an ointment.

Inflammation, acute, chronic—

Acetanilid.
Acetum diluted locally as external refrigerant.
Acid salicylic as an antipyretic in septicæmia, acute rheumatism, erysipelas and pneumonia.
Alcohol as antipyretic and stimulant in low states is very useful.
Alkalies, especially ammonium and potassium salts, as carbonate, chloride, tartrate, are useful during the exudation stage.

Antimonii potassio tartras—powder $\frac{1}{16}$ gr. or wine 10 to 15 ms. in acute inflammation of the tonsils, lungs, pleura, bronchi, &c. It also arrests early local inflammation as quinine is in malarial fever.

Antiphlogistine as an application.

Antipyrin—kairin and other antipyretics are useful.

Argenti nitras locally in inflammation of mucous surfaces.

Astringents as alum, iron, lead acetate, &c. Locally a soothing and astringent application in inflammation of mucous membranes, in erysipelas, eczema, inflammatory diseases of the skin, &c.

Calcium sulphide is useful to arrest suppuration or to hasten maturation after formation of pus and circumscribe inflammation, in boils, abscesses, &c., it improves the condition or promotes healing.

Calomel in the early stage.

Cathartics in inflammation of the brain, lungs, liver, &c.

Chloral hydrate 5 to 10 grs. useful in high temperature with delirium.

Chloralum, to diminish coagulability of fibrin in the blood.

Cod-liver oil, in strumous cases.

Diaphoretics.

Diuretics.

Emetics.

Glycerin locally.

Guaiacol.

Hydropathic belts.

Iodine as antiphlogistic locally as liniment in the vicinity of local inflammation to produce vesication.

Lead acetate solution, locally.

Mercury oleate as inunction.

Mercury bichloride and other preparations in acute glandular inflammation of throat and neck in iritis, laryngitis, in inflammation of serous membranes due to syphilis.

Nitrous ether, strong solution, as an application checks inflammation of superficial parts as boils, orchitis, erysipelas, synovitis, eczema, erythema, &c.

Phenacetin.

Potassium bromide.

,, iodide in chronic cases.

Purgatives. Salines to diminish arterial tension.

Remove any source of irritation.

Resorcin.

Salicine.

Saline cathartics to diminish arterial tension.

Silver nitrate strong solution (1 in 3) as a paint over and beyond inflamed surface checks external inflammations.

Sodium salycylate—very useful.

Unna's paste locally.

Preventives.—Antiphlogistics, cold application, rest, removal of irritation—foreign body.

Diet.—Milk, eggs, fish, beef tea. Avoid starch, fats.

External remedies.—Belts, hydropathic; blisters in chronic cases; cleanliness; compression by bandage or adhesive plaster; elevation of the affected part; enemata of soap suds and vinegar; evaporating lotions of ether, of solution of nitre, sal ammoniac and vinegar.

Fomentation.—Hot flannel; application of heat and moisture; flannel wrung out of boiling water; fomentation medicated (opium); hot water and flannel poultices.

Heat.—Dry heat by heated flannel, hot sand, chamomile flowers, flat tile, brick, bottles with hot water, hot salt in a bag in tendonous inflammation. ice bags, issues, setons and massage.

Leeches in external and internal inflammation as a derivative and counter-irritant; puncture in œdematous inflammation; scarification in plethora; water (cold or hot) as baths; wet packing; dry cupping.

Rubbing and rubefacients.

Influenza or La Grippe—Autumn Catarrh—Rosa Cold—Hay Fever—

Acid boric as gargle and as ointment to the nasal cavities.
,, carbolic as spray or gargle.
,, sulphurous, by inhalation or fumigation, a few drops on boiling water or as spray.
Ammonia antiseptic to keep mouth and nose clean.
Ammonium salts as acetate liquor with nitrous ether or chloric ether. Bromide 1 in 20 as gargle or as spray by an atomizer. Chloride in lung complications. Carbonate with capsicum, known as Granville's snuff, to relieve nasal catarrh. Salicylate or liquor ammoniæ fort. 1 dr. with acid salicylic 1½ drs., to make 8ozs. mixture. Dose—4 drs.
Antifebrin 4 grs.
Antimony tart. $\frac{1}{20}$ to $\frac{1}{12}$ gr., to abort local inflammation of the respiratory apparatus, but is depressing.
Antinervin or a mixture of acetanilid 2, salicylic acid 1, ammonium bromide 1.
Antipyrin 10 grs.
Argenti nitras solution 10 grs. to 1 oz. locally to congested throat and uvula.
Arsenic liquor 3 ms. with belladonna 3 ms. internally in the catarrhal type, also as cigarettes.
Benzoyl napthol as intestinal antiseptic.
Benzol vapour as pulmonary antiseptic.
Betol as intestinal antiseptic.
Bismuth salicylate as intestinal antiseptic.
Bromides.
Cantharides tincture in hay fever.
Cholagogues.
Counter-irritation if any complication arises.
Diaphoretics.
Diuretics.
Ether.
Euphrasin in catarrhal cases.
Ichthyol as spray.
Iodine with arsenic—internally very useful.
Iodoform if intestinal troubles exist.
Mercury perchloride liquor (1 in 1,000) with zinc sulphate solution (1 in 250) as nasal spray.
,, peroxide with glycerin as application to the nose.
Naphthol as intestinal antiseptic.
Orthoform as insufflation.
Peptonized milk.
Peronin.
Phenacetin as prophylactic and as a remedy.
Phenocoll hydrochloride as a prophylactic to relieve neuralgic pain.
Potassium salts as arseniate liquor or bicarbonate 30 grs. with glycerin 20 ms. and liquor ammonia acetatis 4 drs. as a specific prevents complication and also prevents sequelæ. The bromide or chloral with morphia is used as nasal spray. Iodide with liquor potassii arsenitis is given internally. The nitrate papers for smoking or internally diluted.
Removal to the sea coast or to a mountainous district.
Rest.
Salipyrin internally.
Salol internally as intestinal antiseptic, useful during the epidemic.
,, with phenacetin as a prophylactic.

Sanitas oil.
Sodium salts as benzoate with quinine and caffeine to relieve depression. Chloride with quinine and water as spray by an atomizer. Salicylate 5 grs. in repeated doses to relieve pain.
Somatose.
Spiritus ætheris nitrosi ½ to 1 dr. is very useful.
Suprarenal gland extract.
Warberg's tincture.
Zinc phosphide. Dose—$\frac{1}{10}$ gr.

Formula—

1. *Lotion.*—Quiniæ hydrochloratis, 60 grs.; acid carbolici, 20 ms.; hydrargyri bichloridi, ¼ to ½ gr.; glycerin, 1 oz. Mix. For application to the nasal mucous surface.

2. *Snuff.*—Camphor, 5 drs.; ether sulphuric, q. s. to dissolve; ammoniæ carbonatis, 4 drs.; opii pulv., 1 dr.

3. *Lotion.*—Camphor, 16 grs.; carbolic acid, 20 ms.; chloral hydrate, 16 grs.; morphia, 12 grs.; oleic acid, 8 grs.; castor oil, 1 oz. Application to the nose.

External remedies.—Bath (cold baths), Turkish baths, hot sponging, ice bags, steam medicated as inhalation.

Insanity—Dementia—

Absence from home.
Auri et sodii chloridum $\frac{1}{25}$ gr.
Chloral hydrate in wildly, maniacal and erotic patients.
Dionine.
Hunyadi waters.
Hypnotics.
Koumiss excellent if dyspepsia or anorexia exists.
Moral treatment is essential.
Paraldehyde.
Potassium bromide for epileptic-form cases.
Removal to the asylum or hospital.
Rest.
Shower bath if due to self-abuse.
Stimulants next to quiet.
Thyroid extract of great benefit.

Insomnia—Sleeplessness—

Acid hydrobromic dil.
Alcohol if due to cerebral anæmia.
Aldehyde if due to bronchial catarrh or lobar pneumonia.
Allyl hydrobromate. Internally or hypodermically.
Ammonium valerianate.
Amylene chloral.
,, hydrate.
Antimony potassio tart. with opium in insomnia due to cerebral congestion.
Butyl chloral hydrate if weak heart.
Chloral.
Chloral hydrate 20 grs. with potassium bromide 20 grs. and opium, generally direct and a very useful hypnotic, useful in nervous cases. It is dangerous in fatty heart and in old drunkards.
,, urethane if insomnia is due to cardiac disease or pneumonia.
Chloralamide 30 grs. with whisky in simple insomnia or where due to nervousness, chronic alcoholism, hysteria, but not when due to severe pain or excitement.

Chloralose; chlorobrom in insomnia from mental disturbance.
Chloroform internally or by inhalation.
Croton chloral 1 dr., a good hypnotic.
Ether internally in full doses or by inhalation.
Ethylene bromide.
Hypnol a good analgesic and hypnotic.
Hypnone as a hypnotic in insomnia due to acute alcoholism.
Methylal, a good hypnotic.
Musk in insomnia due to irritable brain.
Narcotics.
Paraldehyde 1 dr. a safe hypnotic. Does not depress the heart. Free from unpleasant after-effects.
Peronine.
Phosphorus in insomnia of old people and where nutrition is inactive.
Potassium bromide 15 grs. before each meal and 30 grs. at bedtime increases the hypnotic effects if given with hyoscyamus, belladonna, cannabis, ether, and chloroform in cases due to cerebral overaction.
Potassium bromide useful when insomnia is due to overwork of the brain.
Resorcin useful in insomnia of typhoid fever, general nervous excitability and pulmonary tuberculosis.
Sodium bromide.
Somnal useful in insomnia due to convalescence from acute diseases.
Spermine.
Sulphonal 20 to 30 grs. in milk very useful. To be avoided if insomnia is due to pain.
Tartar emetic alone or with opium.
Tetronal—good hypnotic, to be avoided if insomnia is due to pain.
Trional 5 to 15 grs. alone is a marked hypnotic and sedative, causes dreamless sleep in insomnia of organic cerebral disorders and neurasthenia with sulphonal acts admirably as a hypnotic and sedative.
Urethane as a hypnotic useful for children.

Intermittent Fever—

Acid, carbolic, ½ to 1 m. with ginger or with iodine tincture 3 ms. internally, or with water 20 ms. hypodermically.
,, nitric dilute in obstinate cases in 10-m. doses is useful.
Ammonium carbonate, small doses.
,, picrate, very useful.
Ant. pot. tart. ⅛ to ¼ gr. at the onset.
Arsenic, next to quinine, alone or with iron as a prophylactic is useful in long-standing cases of ague or quarten fever.
Chinoidine and its preparations.
Chinoline.
Chloral hydrate as antipyretic to check malaria.
Chloroform to cut short the cold stage 1 to 2 drs. of spirit given internally or by inhalation.
Cold drinks.
Emetics if chill follows a full stomach, given at the commencement, inadmissible if gastric irritation.
Ferric sulphate in chronic cases.
Iodine tincture internally to prevent ague recurring.
Mercury hydrargyrum cum creta with rhubarb in children in obstinate cases.
Methylene, blue, useful in children.
Nitrite of amyl to abort or relieve cold stage.
,, of sodium.
Nitro-glycerin.
Piperine.
Potassium salts as bromide, chloride, nitrate, 10 grs., with brandy and water, to prevent chill.

Purgatives at first or during intermission.
Resorcin to control pyrexia.
Saccharated lime.
Salicin 10 grs. is useful.
Salipyrine.
Sodium chloride ½ to 1 oz. in hot water during apyrexia.
Sodium hyposulphite 10 to 20 grs. is very useful.
Zinc sulphate.

External remedies.—Bleeding, cold compress, cold sponging, hot bath, iced pack if temperature above 103° or 104°.

Intertrigo—

Acetanilid with boracic acid and camphor locally as a dusting powder to allay itching and heat.
Acid boracic 1 to 6 ointment as application.
Aluminii oleas.
Bismuth nitrate or carbonate locally.
Calomel 1 to 8 of vaseline locally.
Fowler's earth.
Lime water if due to irritating urine.
Soap—greasy applications if due to acid secretions.
Tragacanth with glycerin.
Zinc carbonate or oxide as dusting powder.

Intestinal obstruction—Constipation—Intus-susception—

Abdominal taxis.
Anæsthetics promptly used.
Aspiration or puncture if distended with air.
Avoid purgatives.
Bougie introduced into the bowel.
Calomel, followed by castor oil enema internally or by turpentine, soap and warm water.
Chloroform inhalation.
Enemata nutritive.
Ether and water injected into the rectum.
,, with alcohol and water injection (1 in 25).
Food to be avoided.
Galvanism current from the mouth to the anus.
Glycerin rectal injection.
Ice locally.
Inflation of intestines with air by large enemata is a nice remedy in intus-susception.
Insufflation is often necessary.
Irrigation by hot water in knee chest position in intus-susception is useful.
Massage.
Mercury, calomel followed by castor oil and turpentine enema.
Nutritive enemata.
Oxgall 10 to 15 grs. in solution is useful in intus-susception due to paresis of the bowels.
Poultices.
Puncture the distended bowels.
Purgatives to be avoided.
Saline injection with caution.
Surgical measures.
Water, hot injection.

Iritis—

Aurum bromide with arsenic and mercury.
Avoid irritants or astringents.
Bandage with compression pad.
Chloral to relieve pain.
Compresses, iced or warm, to the eyelids.
Counter-irritation.
Dry heat.
Glasses, blue.
Gold—gold bromide, arsenic and mercury very useful.
Hot fomentation.
Leeches to temples.
Mercurial ointment with belladonna.
Mercury as blue pill 2 grs. in syphilitic cases should be given for a long time.

Potassii iodidi.
Rest complete to the eyes by a bandage with compression pad.
Saline laxatives if weak.
Sodium salicylate if rheumatic.
Surgical treatment—paracentesis, iridectomy, when increased tension, &c.

Irritability—

Acid, hydrocyanic, in irritability of the stomach.
Alkaline waters in hyperacidity of the stomach.
Bromide of potassium useful in nervous excitement and in irritability of the pharynx.
Cantharides in irritability of the bladder.
Chloral hydrate 5 grs. in irritability with nervousness and restlessness.
Laxatives.
Petrolatum as soothing in gastro-intestinal irritability.
Piperazine if due to excess of uric acid bladder irritability.
Potassium bromide if irritability of pharynx.

Externally.—Bandage the legs with cold water; baths cold, tepid or warm, before going to bed in cerebral anæmia; bleeding; cold douche; electricity; hot water bottles to feet and cold to head; removal inland; wet compress; wet pack.

Formula.—Balagoti—Bâlâ, an infant or child, and goti, a pillmass. A colloquial term for a compound medicinal pill given to children.

It contains atisha 1, sañga-jirun 1, murad sing 2, golab kali 1, vakumbha 1½, jaepatri 2, jaephal 4, dalimb-chhâl 4, bela 3½, singroti mul 2, indrajav 1½, zarer ½, tamâl patra ½, pipali mul 1, lendi pipal ½, vâvading 1½, harade (survâri) 1½, kirmâni-ajamo 1½, kâkari bij 7, kadu ½, isas 1½, tavakhir 2, asarun 2, bala vaj 1, lavang 1. Mix and make a pill mass in madha. Dose—2 to 4 grs. in wakefulness in children.

Jaundice—Catarrhal Jaundice—

Acid arsenious with ferri sulphatis and quinine.
,, nitro-hydrochloric dilute with taraxacum before each meal in catarrhal jaundice due to torpor of the liver or during convalescence as a bath to right hypochondrium. 3 ozs. of the acid to 1 gallon of water.
Alkaline mineral waters in duodenal catarrh or catarrh of bile ducts.
Ammonium chloride 20 grs. with taraxacum very useful.
,, iodide 1 to 3 grs. in catarrh of bile ducts and jaundice.
Arsenic very useful in jaundice of malarial jaundice or that due to catarrh of bile ducts—after catarrh of duodenum.
Apollinaris water.
Baths—steam baths, alkaline baths.
Bezoar.
Blisters.
Calomel.
Carlsbad salts. To be taken lukewarm.
Diaphoretics.
Diuretics.
Enemata of cold water.
Ether to dissolve gallstone.
Ferri succinas.
,, sulphatis exsiccata.
Iodoform.
Iron succinata.
Magnesium sulphate with fel bovinum and podophyllum.
Manganese oxide if jaundice is due to malaria or to catarrh of biliary passages.

Mercurial ointment as inunction. Gray powder ½ gr. with ipecacuanha internally, followed by castor oil in jaundice with depression, vomiting, coated tongue or excess of bile.
Mercurials and podophyllum to be avoided in obstructive jaundice.
Pichi.
Potassium chlorate.
Sulphate.
Saline purgatives, as Rochelle salt, to depurate the upper bowels with alkaline baths.
Salol very useful in catarrhal jaundice.
Sodium benzoate.
„ phosphate 1 dr. in jaundice due to catarrh of bile ducts.
„ pyrophosphate.
„ salicylate as a cholagogue.
Spiritus etheris nitrosi.

Diet.—Avoid starches, fats, alcohol, high seasoned food. Give milk, eggs, broth, green vegetables.

Joint Affections—Swollen Joints—Polyarthritis—Synovitis—

Acid salicylic 1 to 4 of olive oil as a paste locally applied in obstinately stiff and painful scrofulous knee, ankle and wrist joints and to bones.
sulphuric 1 to 8 as irritant ointment in chronic diseases of joints is very useful.
Alcohol and water (1 to 1) as evaporating lotion is very useful.
Ammonium chloride solution (1 in 80).
Arsenic in large doses is useful in rheumatoid arthritis and nodosities of joints.
Baths—Turkish baths for stiff joints.
Blisters.
Cadmium iodide.
Cantharis vesicatoria. Externally for swelled joints.
Cod-liver oil in strumous cases—in scrofulous joint affections.
Cold douche, for stiff joints.
Galvanism, for stiff joints.
Ice to the knee.
Ichthalbin internally.
Ichthyol locally as ointment to relieve pain.
Iodine 1 to 8 of glycerin in obstinate cases of rheumatic joint disease.
Iodoform, in scrofulous diseases of joints and bones.
Iron ferrous iodide with iodine locally in scrofulous affections of bones and joints.
Mercury oleate or unguentum hydrargyri ammoniata 1 to 4 to be rubbed in chronic articular inflammation of the knee or other joints.
Massage except in the case of hip joints.
Phenacetin, a safe antipyretic to relieve pyrexia of polyarthritis.
Silver nitrate solution with nitrous ether applied locally to adjacent vascular parts to relieve inflammation of small joints.
Sozoiodole—mercury ointment.
Tartar emetic ointment.

Keratitis—Corneal opacity—

Acid boracic solution.
Antisyphilitic treatment.
Arsenic internally for constitutional effects.
Avoid astringents or irritants as alcohol.
Calcium sulphide ⅛ to ¼ gr. with sugar of milk is very useful.
Calomel—dry dusting powder for ulcer.
Cod-liver oil.
Curetting.
Fomentation, hot water, with belladonna.
Hot compresses.
Hyd. perchl. solution.

Hydrarg. oxid flava with olive oil, locally.
Iron iodide syrup internally.
Iodine paint as counter-irritant to the temples.
Iodoform ointment.
Iridectomy useful to relieve pain in severe vascular keratitis.
Leeches.
Mercurial ointment.
Mercuric and ferric chlorides with cod-liver oil in interstitial and syphilitic keratitis.
Potassium bromide internally for constitutional effects.
,, iodide for constitutional effects.
Pressure—bandage in suppurative forms.
Sodium chloride solution (1 in 500) injection under the conjunctivæ.
Supra renal extract.
Tannic acid—Dusting powder if due to granular conjunctivitis.

Formula.—Zinci oxide, 120 grs.; Armenian bole, 150 grs.; olive oil, 4 drs.; ammoniated mercury, 1 dr.; lanolin, 4 drs. Mix. Application for nebula and corneal opacities.

Labour—Tedious Labour—

Acetanilid to bring on profuse sweat and thus relax muscular rigidity and ease the pain.
Amyl nitrite, useful in hour-glass contraction of the uterus. It relaxes the uterus.
Anæsthetics with care only in protracted and painful cases. It is risky, as it increases the tendency to *post-partem* hæmorrhage.
Antimony et potassii tartras. Dose—$\frac{1}{60}$ gr. in rigid os.
Borax in tedious labour excites activity of the uterus.
Chloral hydrate 15 grs. to relieve rigid undilatable cervix and to relieve pain.
Chloroform inhalation, after the os is fully dilated, not to produce complete anæsthesia as it would interrupt further uterine action.
Diffusible stimulants.
Ethyl bromide as an anæsthetic very useful.
Hot soup.
Mercury bichloride $\frac{1}{2000}$ gr. lotion as wash, but acid carbolic lotion is to be preferred.

Lactation—

Ammonium chloride 10 grs. in intercostal neuralgia due to suckling.
Gaduol.
Glycerophosphates.
Hypophosphites, in debility from overlactation.
Thyroidin.

Lactation when excessive—Antigalactagogues—

Alcohol for women weakened by suckling.
Antipyrin 4 grs. as antigalactagogue.
Calcium phosphate and hypophosphite in debility from overlactation.
Chloral hydrate.
Electricity.
Iodides.
Mercury.
Potassium bisulphite.
,, iodide.

Drugs, excreted in the milk when taken by nursing women, are arsenic, antimony, bismuth, iodine, iron, lead, mercury, and zinc. Acids taken by the mother cause griping in the child. Natural salts and purgative drugs taken by the mother act as purgatives in the child. Potassium salts act as diuretics. Potassium iodide may be detected in the urine of the child. Salicylates and potassium sulphide may be found in the milk of the woman.

Laryngismus Stridulus—

Antipyrin.
Bromides to relieve or check spasm, to moderate the attack, and to prevent recurrence.
Chloral, 15 grs., to prevent the attack.
Chloroform—a few whiffs will stop the paroxysm.
Cold sponging—wet pack to the neck.
Nitro-glycerin to allay the spasm.
Out-door exercise.
Tartar emetic.

Laryngitis—Acute Catarrhal—

Abstinence from talking.
Acid acetic as inhalation, or vinegar as gargle.
,, sulpho-anilic as sodii sulphanilas internally.
,, sulphurous as inhalation or as spray.
Aldehyde diluted (1 dr. to 1 pt.) as vapour in catarrh or congestion.
Ammonium chloride with opium internally.
Antikamnia—internally.
Antimony. Tartar emetic $\frac{1}{30}$ gr. with Dover's powder internally in œdematous laryngitis.
Antipyrin as a spray.
Argenti nitras as cautery.
Bromides internally.
Calomel, small doses, followed by a saline purge.
Chloroform and acid hydrocyanic as inhalation.
Chlorophenol as inhalation.
Copper sulphate as an emetic.
Creosote as spray.
Demulcents, mucilaginous drinks and diaphoretics internally.
Ethyl iodide as inhalation in œdema of the glottis.
Glycerin locally.
Intubation—a silver tube inserted into the larynx.
Iron—Monsel's solution 1 to 2 of water and glycerin locally to the larynx.
Potassium iodide.
Purgatives in the early stage.
Sanitas oil.
Sozoiodole sodium, potassium, or zinc.
Tracheotomy if other remedies fail; useful in œdematous laryngitis recurring in Bright's disease.
Zinc sulphate as an emetic internally or 20 grs. to 1 oz. of water as solution to be applied locally to the larynx by a sponge.

External remedies.—Free atmosphere; warm baths; hot foot-bath; cold locally; ice to suck or locally over the larynx. Fomentations, hot water stupes alone or with turpentine to the chest; inhalations of medicated hot steam with compound tincture of benzoin (20 ms. to 1 oz.) or with either tinct. opii, hops or conii; iodine inhalation or iodine as counter-irritant to be painted over the neck; leeches to the throat if œdema exists; cupping to the nape of the neck; scarification of the larynx if œdema exists; poultices; gargle of hot milk.

Diet.—Bland, nourishing and unirritating.

Formula.—Potas. carbonat., 20 grs.; tinct. opii, 30 ms.; syrup senegæ, 2 drs.; syrup tolutani, 12 drs.; aqua, 3 ozs. Dose—1 dr.

Ammonii bromid., 60 grs.; ammonii chloridi, 40 grs.; potassi chloratis, 40 grs.; tinct. opii, 30 ms.; syrup scilla, 4 drs.; elixir calysayæ, 1 oz.; aqua, 3 ozs. Dose—1 oz.

Laryngitis, Follicular, Glandular or Syphilitic—

Acid carbolic solution (1 to 7), of glycerin locally or as inhalation 1 dr. in 1 pint of hot water.
,, chromic—application to the syphilitic ulcers and cords.
Alum solution as gargle or spray to the back of the throat.
Ammonium chloride as spray, or air loaded with its vapour as inhalation.
Bismuth subnitras used as insufflation.
Chloroform vapour by steam atomizer.
Copper sulphate 20 grs. to 1 oz. locally applied.
Counter-irritants locally.
Creosote with hops by inhalation.
Ferri chloride with glycerin (1 to 8) locally as a paint or spray.
Glycerin with codea, citric acid and gelatine, known as codea jelly, internally in laryngeal hacking cough.
Guaiacum lozenges in mucous laryngitis.
Insufflation to the larynx by some bland powder.
Iodine paint over the neck; iodine inhalation of the vapour.
Irritating matters in the throat to be removed.
Silver nitrate powdered or solution (10 grs. to 1 oz.) as a paint to the larynx used carefully with a brush.
Sodii biborate with glycerin as paint if ulceration is present.
Sodium sulphite solution 1 dr. to 1 oz. of water by inhalation, spray or by fumigation.
Sulphur as sulphurous acid by spray in syphilitic cases or as sodium sulphite (1 to 8) as spray or wash or by fumigation.
Water boiling for steam inhalation.
Zinc chloride with glycerin or as solution to apply locally.

External remedies.—Avoid oratory, use of alcholic drinks, tobacco.

Use setons; give rest to the voice in phthisical or syphilitic laryngeal cases.

Formula.—Mixture.—Potassii bromidi, 2 drs.; ext. aconiti, 2 grs.; antimony potassio tartrat., 1 gr.; syrup pruni virginiana, 2 ozs. Dose—2 drs. In catarrhal aphonia.

Inhalation.—Aquæ ammoniæ, 4 drs.; thymol, 12 ms.; kaolin, 12 grs.; magn. carb., 12 grs.; aqua, 1 oz. Mix. In catarrhal aphonia.

Voice lozenges.—Potassii chloratis, 2 grs.; eucalypti extract, 1 gr.; pulv. cubeba, ½ gr.; confection of roses, 2 grs. For lozenge—1.

Laryngitis, Tubercular—

Acid lactic, by insufflation. The solution 30 per cent. as paint or swab or by injection.
Antitoxin serum.
Bismuth subnitrate or subgallate by insufflation.
Creosote by inhalation.
Curette or scraping the diseased mucous membrane of the larynx or the ulcerated parts.
Diet—Thick liquids better than thin ones.
Feeding by soft rubber tube if dysphagia exists.
Hydrogen peroxide.
Iodoform by insufflation even if extensive ulceration.
Iodol and boric acid by insufflation.
Mercury bichloride as spray (1 in 2,000).
Resorcin locally in tuberculous and other ulcerations of the larynx.
Scarification.
Silver nitrate locally as powder or in solution.
Tracheotomy in deep and extensive ulceration.
Zinc chloride or zinc sulphate solution with cocain 2 per cent. locally in early catarrhal stage.

Leprosy—

Acid arsenious with black pepper internally.
,, carbolic as vapour locally.
,, pyrogallic ointment 10 per cent. in lanolin.
,, salicylic with chrysarobin and creosote as a plaster to the affected head and chin.
Ammonium iodide.
Antitoxins.
Arsenic and mercury iodide solution.
Cleanliness.
Diet nutritious.
Europhen 5 per cent. in oil locally.
Ferri arsenas ½ gr. internally.
Glycerin locally.
Hoang-nan 2 with alum 1 and realgar 1, as pill. Dose—3 grs.
Hygiene.
Ichthalbin internally.
Ichthyol locally with pyrogallic acid and lanolin (1 to 10) or internally.
Mercury bichloride as wash (1 in 2,000).
,, per iodide ointment (1 to 10) of lanolin.
,, red iodide 1 to 80 of lanolin.
Potassium iodide internally.
Sero-therapeutics.
Silver nitrate as alterative internally.
Sodium bicarbonate as lotion.
,, salicylate 15 grs. internally.
Sulphur iodide internally.
Thyroidin is useful in nervous leprosy.
Warm baths.

Leucocythæmia—Leukæmia—

Alkaline hypophosphites.
Arsenic hæmol.
,, liquor 5 ms. in increasing doses.
Baths of nitro-muriatic acid.
Bone marrow.
Cod-liver oil.
Galvanisation to the spleen.
Glycerophosphates.
Iron in large doses.
Nutrients.
Oxygen inhalation for a long time to reduce the spleen.
Phosphorus $\frac{1}{10}$ gr. is very useful.
Removal of the spleen is useless.
Thymus extract.
Tonics.
Zinc phosphidum.

Leucorrhœa—

Abrak.
Acids, boric (1 in 60), as injection; carbolic diluted as vaginal injection; chromic or nitric as application to the os and cervix; nitric dilute and cinchona internally; phosphoric dilute internally, salicylic (1 in 50) with glycerin locally; alkalies locally to correct acrid discharges.
Alum with quinine and oak bark internally.
Aluminio ferric alum internally.
Calcium phosphate 1 to 2 grs. internally in cachexia.
Dry red wine internally.
Iodides and bromides internally.
Iron iodide, ferric carbonate and other iron preparations internally.

Externally.—Baths (hot), blister to the sacrum, cold sponging, hot water injections as tonic to the pelvic vessels to relieve venous congestion, ice bag (spinal), poultices to the hypogastrium.

Application locally to the Os and Cervix.—Acid chromic, nitric, salicylic (1 in 50) of glycerin, iodine tincture alone or with potassium iodide and tar water or with carbolic acid and opium, potassium permanganate 4 per cent. solution.

Dusting Powder or Insufflation.—Bismuth, hâthidânt bhasm, iodoform with tannin (1 to 8), iodotannin (1 to 8) as a dry pack.

Injections, vaginal.—Acid boric with glycerin or with vaselin or cocoa butter, acid carbolic diluted, alum alone or with borax as solution, bismuth with mucilage, chloral hydrate 1 in 40, chlorinate of sodium liquor (1 in 10), cupri sulphas (1 in 500), ferric chloride tincture (1 in 150), ferric sulphate (1 in 80), potassium carbonate or chlorate 1 dr. in 1 pint of water, if the discharge is alkaline and copious, silver nitrate, sodium carbonate 1 dr., with belladonna 2 drs. and water 1 pint, sodium chlorinate liquor with sodium salicylate as solution.

Irrigation.—Gases medicated, plain or medicated liquors, vapours medicated.

Tampon into the Vagina.—Alum with bismuth or tannic acid, equal parts, glycerin as vehicle for other agents, glycerin alone for erosion or ulceration of os and cervix, glycozone on absorbent cotton, iodoform alone or with oil of fennel or with Peruvian balsam, silver nitrate with alum and bismuth.

Suppository, vaginal.—Bismuth with cocoa butter, plumbi acetate or plumbi iodidi with opium.

Wash, vaginal.—Acetum (1 in 15), bandharo (1 in 15), borax (1 dr. in 1 pint of water), hydrargyri bichloride (1 in 1,000), potassium nitrate with alum, potassium permanganate (1 in 100), sodium carbonate (1 in 100), zinc acetate (1 in 200), zinc sulphate (1 in 500).

Lichen Planus—

Acid nitric dilute 10 ms. after meals.
Alkaline lotions as a wash.
Antipyrin internally to avoid itching.
Arsenic very useful.
Calomel internally or calomel with mercuric nitrate and tar ointment in obstinate cases.
Cantharides tincture locally.
Cautery superficially to remove itching.
Cod-liver oil with ferri arsenas internally.
Excision to remove horny incrustations.
Galvano-caustic wire.
Ichthalbin internally.
Ichthyol locally.
Liquor carbonis detergens as a wash.
Mercury bichloride 3 grs. with carbolic acid 20 ms. and zinc ointment 1 oz. locally.
Plumbi acetate liquor thickened with zinc oxide and starch or calamine and with carbolic acid or liquor picis carbonis. The paint acts as a sedative in acute cases.
Potassium chlorate 15 grs. before meals.
Silver nitrate with nitrous ether painted over the patch.
Strontium iodide internally.
Sulphides.
Tar ointment.
Warm baths.

Lithæmia—Lithiasis—Uric Acid or Lithic Acid Diathesis—

Acids, benzoic, to reduce the acidity in uric acid diathesis, to acidify phosphatic urine; hydrochloric, nitric, or lactic for faulty digestion and assimilation; salicylic and its salts as solvents and excretants of uric acid in the urine.
Alkalies and alkaline mineral water rich in potassium salts to clear the portal system, also to favour solution of calculi.
Calcii or sodii hippuras as solvent for urates.
Carlsbad salts.

Lithium salts as the bromide in solution of potassium citrate 3 hours after food internally; the citrate 20 grs., the salicylate, the carbonate and benzoate are very useful.

Lithontriptics.

Lycetol and lysidine, good solvents of uric acid given internally.

Oxygen peroxide.

Piperazine to promote the solubility of uric acid and urates with which it forms soluble uric acid compounds and to relieve itching (pruritus).

Potassium salts as acetate, carbonate, citrate to relieve biliousness; tartrate and permanganate prevent calculi by converting uric acid into urea.

Purgatives.

Sodium salts as benzoate, borate, chloride, carbonate and phosphate.

Strontium salts as the citrate, lactate and salicylate useful in uric acid, in chronic gout and in lithæmia with intestinal indigestion.

Vichy water.

Diet.—Use milk diet, starchy food, vegetables, acid fruits. Avoid alcohol, abstain from succulent vegetables and fruits, and from animal food; avoid sedentary habits and high living.

Locomotor Ataxia—(Posterior Spinal Sclerosis) (Tabes Dorsalis)—

Acetanilid or antipyrin or phenacetin to relieve lancinating pain.

Baths—shower bath and frictions, salt foot-bath with sulphide of potassium.

Blister to the spine.

Cod-liver oil and iron as tonic.

Cold compress to the head and neck.

Cupping to the loins.

Electricity—galvanic current to relieve pain. Faradac current is useful in wasting of muscles and constant current to relieve irritation ascending through the spinal column.

Friction with a cloth dipped in water.

Glycerino-phosphate as tonic.

Gold bromide and arsenic or gold and sodium chloride useful to retard the progress.

Mercuro-iodo-hæmol or mercury bichloride to retard the progress.

Never stretching.

Neurodyne.

Orchitic extract is very useful.

Phosphorus, metallic phosphates with dilute phosphoric acid.

Potassium salts as bichromate, bromide, iodide, useful to retard the progress.

Rest as perfect as possible.

Silver salts as nitrate $\frac{1}{16}$ gr. with belladonna $\frac{1}{8}$ gr. or with sodium hypophosphite 1 gr. or with nux-vomica $\frac{1}{8}$ internally in progressive locomotor ataxia to relieve motor disturbances; silver oxide silver phosphate.

Sodium salts as bromide or hypophosphite with silver nitrate. These to be discontinued when blue line on the gums appear.

Spermine is very useful.

Suspension with plaster jacket.

Zinc phosphide internally.

Diet.—Milk, nutritious food.

Lumbago—

Acetanilid.

Acid carbolic, perosmic or salicylic.

Acupuncture gives relief, but not if there is high fever.

Alcohol locally.

Ammonium chloride 10 grs. to be repeated till congestion of nasal mucous membrane appears—given to relieve muscular rheumatic pain.

Anodyne amyl colloid locally.

Antipyrin 8 grs. hypodermically very useful, also phenacetin and salol internally.
Cautery.
Chloroform liniment gives relief.
Cod-liver oil as tonic.
Electricity, faradization, galvanism—constant current—very useful.
Ether spray locally as an anæsthetic to the loins.
Eucalyptus oil as liniment.
Gaduol as tonic.
Hot douche, hot poultices, or hot flat iron to the seat of pain.
Ice bags or ice rubbed over the back.
Ichthyol 20 per cent. as ointment.
Iodides are useful if due to syphilis, mercury, lead, copper, or tin poisoning.
Massage.
Neurodin 5 to 15 grs. as antineuralgic.
Potassium nitrate 10 grs. if urine is scanty and high coloured.
,, salicylate and iodide very useful.
Rest absolute of great importance.
Rochelle salt internally.
Sodium glycero-phosphate as tonic.
Strapping with sticking plaster from the thigh upwards.
Turkish bath.

Diet.—Generous and nutritious. Lemon juice.

Lung Diseases—Lungs, Gangrene of—

Ammonium acetate very useful in all pulmonary complaints.
,, carbonate with cinchona very useful.
Blisters to the chest in hypostatic pulmonary congestion.
Carbolic acid by inhalation very useful.
Creosote by inhalation removes fœtor.
Eucalyptus oil and alcohol (1 to 1) as inhalation.
Liquor potassæ useful in congestion of the bronchi or lungs.
Mineral acids (nitro-hydrochloric) with quinine in chronic cases.

Lupus—A Dermal Form of Tuberculosis—

Acid carbolic crystals as a superficial and mild escharotic.
,, chromic solution locally as an escharotic.
,, lactic locally alone or with kaolin as a paste attacks the diseased tissue only and effectually destroys it.
,, salicylic as a paste with ichthyol and hydrargyri oleate or with creosote has a selective action on the new growth and destroys it without any injury to the healthy tissue. As dressing, acid salicylic 5, creosote 5, glycerynum saponatum 90, is useful after the destruction of the growth.
,, trichlor acetic locally.
Airol locally as antiseptic dusting powder or ointment.
Aristol is very useful as dressing.
Arsenic internally in chronic cases but not syphilitic.
,, with iron and iodine internally.
Arsenicum oleate in ulcerative forms to destroy cell infiltration, also in the tubercular form.
Arsenious acid and calomel locally as a dusting powder in lupus over the head and face.
Auri et sodii chloridum is used as a caustic.
Aurum arsenate internally is very useful.
Blisters.
Calcium salts, as chloride, internally given for a long time bears good results.
Cauterization by galvano cautery, actual cautery as hot iron at white heat, after scraping the diseased tissues, is useful.

Cocaine solution 5 per cent. as application.
Collodium salicylic locally.
Electrolysis acts on the diseased tissue.
Iodine tincture internally or as paint or with glycerin solution locally applied to the edges in syphilitic or scrofulous cases.
Iodoform locally.
Lassor's paste.
Lead—liquor plumbi with glycerin (1 to 2) applied after separation of the crusts.
Mercury as calomel internally as a constitutional remedy or as dusting powder or as ointment. Bin-iodide, nitrate, oleate or mercury plaster is useful in lupus erythematous.
Petroleum ceratum locally.
Phosphorus internally as a substitute for arsenic is very useful.
Potassium cantharidate locally.
Resorcin locally.
Scraping the diseased tissue by Paquelin's cautery is very satisfactory.
Silver nitrate—a weak solution applied in superficial forms.
Sodium ethylate as a caustic on absorbent cotton followed by dusting with bismuth oleate as a soothing application.
Strontium iodide is very useful.
Thiosinamine used hypodermically.
Tuberculin locally injected gives good results.
Tuberculocidin.
Thyroidin or thyroid extract to stimulate the activity of the skin function.
Zinc chloride paste locally.
„ sulphate dusted over the surface acts as a caustic, and then poultices applied to remove the slough.

Phototherapy to bring the concentrated chemical solar and electric rays upon the lupus patch.

Lymphadenoma—Hodgkin's Disease—

Arsenic liquor as Fowler's solution internally or injected into the gland to remove glandular swelling.
Bone marrow is beneficial.
Extirpation of the gland is of benefit if there is no fever, nor marked anæmia.
Iodine often does good.
Organic extracts have been used with good results.
Phosphorus, a good substitute for arsenic.

Lymphangitis—

Acid picric solution, applied locally over the red lines.
„ sulphurous internally.
Acidulated drinks.
Cotton wadding for the limb.
Emetic, to remove gastric derangement.
Iodine tincture locally round the glands to prevent suppuration.
Lead—liquor plumbi subacetatis applied locally with good results to soothe and restrain the inflammation.
Mercurial ointment to be rubbed.
Poultices and rest to the part.
Salicin with brandy in septic cases.
Stimulants and tonics.
Sulphites. Internally.
Warm baths.

Malaria—Chronic—

Acid arsenious and arsenites with iron as powerful prophylactic against malaria and in chronic malarial poisoning. It prevents the return of fever and neuralgia and diminishes splenic enlargements.
,, cacodylic.
,, carbolic and iodine is useful in chronic malarial infection as an antiperiodic and a reducer of spleen.
,, picric.
Ammonium picrate ¼ to ½ gr. in ague.
Arsenyl.
Bath—Turkish baths and vapour baths cure by inducing perspiration.
Calomel as a purge.
Eucalyptus, to promote assimilation.
Guaiacol.
Iron and manganese iodide. Syrup ½ dr. is useful in chronic malaria.
,, and quinine citrate in chronic forms.
,, arseniate and ammonium citrate subcutaneously.
,, sulphate is useful in anæmia with enlarged spleen.
Liquor iodi terchloridi.
Manganese sulphate is useful in malarial jaundice.
Nuclein is of great benefit.
Salicin or salicylates of cinchonidine and quinine to check chronic malaria.
Sodium chloride.
Warburg's tincture.

Mania—

Anæsthetics.
Bath warm if cerebral excitement.
Blisters.
Bromides with cannabis tincture, equal parts, very useful in puerperal cases, in mania of pregnancy, in nymphomania, &c.
Chloral and camphor as calmative and hypnotic.
,, hydrate to procure sleep and quiet the mind.
Chloroform by inhalation to be given short of complete anæsthesia.
Cold douche to the head in mania with delirium, alternated with warm bath.
Enemata.
Fomentations, hot.
Galvanism to the head and cervical sympathetic.
Iron chloride tincture 10 ms. as a restorative.
Paraldehyde ½ dr. as hypnotic is useful.
Potassium bromide with tincture cannabis ½ dr. each in acute cases.
Poultices.
Removal from home, from friends, and surroundings.
Sulphonal.
Tartar emetic with opium if depression.
Urethane 10 grs. internally.
Wet pack.

Mastitis—Mammary Abscess—

Acetum-vinegar, locally to abort inflammation.
Acid carbolic lotion for abscess.
Alcohol or eau de cologne and water as lotion to sponge the breast.
Ammonium chloride as resolvent locally; as lotion with spirit rosmarini (1 dr. to 1 pt.) in induration after suppuration till the part is cold.
Antimony tart. in the early stage.

Antiseptic gauze locally.
Argenti nitras as cautery if fistula exists.
Bandaging the arm to the side to prevent motion.
Breast pump if due to milk.
Calcium sulphide internally in mammary abscess.
Chloral hydrate with olei lini (1 to 8) application or solution for poultice to relieve induration and pain.
Chloroform and glycerin application in threatening inflammation.
Cod-liver oil.
Cold compress.
Drainage tube.
Heat from steam to relieve pain and prevent suppuration.
Ice locally.
Ichthyol locally.
Iodine ointment or tincture, locally, to remove induration of breast after inflammation.
,, injection if fistula exists.
Incision in the radius of the breast.
Lead acetate liquor as lotion.
,, iodide as discutient.
Mercury oleate with morphine oleate locally in mammary abscess.
Oil friction in the early stage from the circumference towards the nipple.
Phosphorus.
Plaster of Paris bandage to arrest lactation.
Plumbi carbonas with carbolic oil and linseed-oil-paste as application.
Rest to the mamma by supporting them with straps of plaster.
,, to prevent motion.
Tin foil as a compress.

Measles—Rubeola—

Acid carbolic internally useful in the early stage.
Adeps lanæ as inunction.
Ammonium acetate liquor and ammonium carbonate—reliable remedies to relieve cyanosis, delirium, and feeble circulation.
Antimony to allay cough and catarrh.
Baths—foot-bath. Hot if convulsions occur. Tepid bath with cold douche to the head to allay cerebral symptoms.
Cleanliness to be strictly observed.
Diet.—Low. No animal food.
Cod-liver oil and iron during or after convalescence.
Calcium sulphide during convalescence.
Cold packing wet sheet when retrocedent.
,, affusion in the early stage.
Dark room in scrofulous children.
Inunction of butter to lessen fever.
Kairin.
Purgatives should be given with caution.

Melancholia—Hypochondriasis—Mental Depression—

Acid nitro-hydrochloric dil. after meals.
Arsenic with opium in the aged persons.
Bromide of potassium is very useful in unendurable despondency.
Chloral hydrate as a hypnotic gives great relief.
Gold salts very useful in suicidal tendency, or gold bromide and arsenic hypodermically, or gold and sodium chloride $\frac{1}{30}$ to $\frac{1}{10}$ gr. in anæmia.
Iron chloride tincture as restorative.
Musk and castoreum are very useful.
Orchitic extract is very useful.
Paraldehyde.
Phosphorus to relieve depression from overwork.
Thyroidin.
Turkish baths.
Urethane.
Zinc phosphide.

Water cure.—Shower bath, cold bath, warm bath, cold douche.

Meningitis, cerebral, spinal, epidemic—Cerebro—Spinal Fever—Spotted Fever—

Acid hydrocyanic dil. with sodium carbonate to check vomiting.
,, salicylic.
Alcohol.
Ammonium carbonate as stimulant.
Antimony potas. tartras is of great service.
Antipyrin of good service in cerebro-spinal meningitis.
Bismuth to control nausea.
Blister to the nape of the neck to prevent effusion and in coma after acute symptoms have subsided.
Bromides alone or with chloral to relieve nervous symptoms and to guard against opium in cerebral and cerebro-spinal meningitis.
Calomel and opium in the early stage of cerebral meningitis.
Cautery, actual, as a counter-irritation freely to the back of the neck to alleviate pain.
Cold baths—cold douche or ice to the spine to relieve pain in the head.
Croton oil as a derivative and revulsive locally for rubbing over the shaven scalp gives good results.
Fresh air, free ventilation.
Iodoform internally.
Iron chloride tincture 10 to 20 ms. is of benefit.
Leeches to nape of neck or behind the ears or on temples to relieve terrible headache.
Mercury bichloride $\frac{1}{10}$ gr. with potassium iodide 10 grs.
,, ointment as inunction rubbed in the groins and armpits is good for children in cerebral meningitis, even in desperate cases.
Milk cure.
Phosphorus in chronic cases.
Potassium bromide if convulsions follow the attack.
,, iodide in large doses is useful in the later stages of syphilitic meningitis. Avoid its use if there is gastric derangement.
Purgatives from the first, calomel and jalap.
Spermine.
Venesection early in sthenic cases with excitement.

Diet.—Nutritious, at short intervals.

Meningitis, Tubercular—

Cod-liver oil internally.
Ferrous iodide internally.
Iodine paint to the scalp or iodine ointment as inunction.
Leeches on the scalp.
Magnesium carbonate.
Mercury perchloride $\frac{1}{10}$ gr. internally.
Mercury oleate or mercury ointment by inunction.
Potassium iodide with potassium bromide.
Purgatives.
Tartar emetic ointment as counter-irritant to the scalp.

Menorrhagia—Metrorrhagia—

Acid sulphuric dilute if due to the pressure of polypus, fibroid, &c.
Alum alone 2 drs. to water 4 pints or with sulphuric acid as a wash.
Ammonium salts as acetate liquor, or as bromide; as chloride if attended with headache.
Argenti oxidum internally.
Arsenic alone as liquor 5 ms. or with iron if due to anæmia.
Brandy as stimulant.
Bromide of potassium with ergot is very prompt in its effects.
Calcium phosphate in anæmia from excessive discharges.
Iodine or iodoform locally to the os.
Iron salts as perchloride, sulphate, pernitratis liquor in anæmia.
Magnesium sulphate with diluted sulphuric acid is very useful.
Mammary extract gives good results.
Phosphates as tonics.

Plumbi acetas as enema or internally.
Potas iodide 1 dr., tincture iodine 1 dr., acid carbolic 1 dr., glycerin 1 dr. To swab the uterus.
Potassium bromide with ferri bromide.
Potassium chlorate with ergot very useful.
Rest absolutely necessary.
Salipyrin.
Sangjirun internally.
Sodii salicylas. Dose—10 to 20 grs.
Stypticin.

External remedies.—Dry cupping over the sacrum if congestion. Hot water bag to dorsal and lumbar regions, hot foot-bath, ice to the spine.

Miliaria—Prickly Heat—

Alkaline lotions.
Baths—warm baths, sulphide baths, sponge baths.
Carbolic acid 4 per cent. solution with glycerin locally to check itching.
Cuprum sulphate or lead acetate 10 grs. to 1 oz. as solution.
Inunction of the body with fat or vaseline.
Zinc oxide or starch or lycopodium or rice powder as dusting powder.

Diet.—Avoid alcohol. Avoid all causes which would lead to perspiration, as stiff exercise, living in close rooms, warm clothing.

Myalgia—Painful Muscular Affections—

Acupuncture or aquapuncture.
Ammonium chloride 20 grs., very useful.
Baths, Turkish, when due to overexertion.
Chloroform liniment locally with friction gives great relief.
Clove oil locally.
Diaphoretics internally.
Electricity, constant current.
Exalgin 1 to 2 grs. internally.
Firing is often very useful.
Iodine ointment to relieve pain and tenderness of muscles.
Massage.
Packing with wet sheet.
Potassium acetate, citrate, or iodide internally.
Poultices very hot.
Rest is very essential.
Salicylates.

Myelitis—Spinal Paralysis—

Cupping to the loins to relieve localized pain or tenderness.
Derivatives as warm water, rectal enema.
Electricity galvanism in chronic cases.
Hydrotherapy.
Leeches when localized pain or tenderness.
Phosphorus in myelitis with paraplegia due to excessive venery.
Posture prone or on one side.
Rest absolute.
Silver nitrate ¼ to ½ gr. in chronic inflammation of the cord.
,, phosphate in myelitis with bladder and rectum affected.
Sodium phosphate hypodermically.
Water, ice bag, hot douche to the spine, hot foot-bath.

Myxœdema—Thick and Insensible Skin—

Arsenic iron salts as tonic.
Avoid exposure to cold.
Baths daily.
Hypophosphites as tonic.
Iodothyrine.
Thyroid gland extract very useful.
Treak farook internally.

Nasal Affections—

Acid chromic locally.
,, trichloracetic.
Alum alone or aluminium tanno tartrate or aceto-tartrate as dusting powder.
Ammonia inhalation to relieve pain and inflammation in the nose and of frontal bones.
Bismuth subgallate as dusting powder locally.
Cod-liver oil internally in chronic discharges.
Glycerin with tannin or with starch or with zinc oxide locally in excoriations or for eruptions where hair grows.
Epilation to relieve black, stinking mucus from the nose.
Iodoform.
Nasal douches and nasal injections.
Potassium iodide, large doses 10 to 20 grs., in syphilitic affections of the nose.
Silver nitrate locally.
Sulpho-carbolate 5 grs. to 1 oz. as solution locally by a probe to the nasal mucous membrane to diminish sensibility.
Suprarenal gland extract internally.
Zinc salts as chloride 2 grs. to 1 oz., sulph. carbolate 5 grs. to 1 oz., solution locally; oxide as ointment for application inside the nose for impetiginous eruptions.

Nausea—Biliousness—Sea-sickness—

Acid carbolic and creosote useful in reflex nausea.
Ammonia citrate of iron, well diluted, is useful in troublesome nausea.
Bismuth liquor is useful in nausea due to gastric disorder.
Cerium oxalate.
Chloroform 2 ms. on sugar internally.
Cold compress, ice bag over the stomach.
Counter-irritation over the pit of stomach.
Electricity.
Hoffman's anodyne if nausea be due to excessive use of tobacco.
Heat—hot water sponge, hot saline, hot flannel over the epigastrium.
Ingluvin, orexine, pepsin internally.
Koumis.
Leeches to the pit of the stomach.
Lime water.
Mercury pil. hydrarg. or calomel useful in obstinate cases.

Nervous Affections—

Aletris alternated with hypophosphites in nervous exhaustion.
Ammonium bromide.
Arsenic liquor 5 to 10 ms. or arsen hæmol in nervous affections due to malaria.
Bromine salts—as bromalin, bromipin, bromo-hæmol—as nervine sedatives.
Caffeine hypodermically in insomnia, and dorso-intercostal neuralgia.
Exalgin.
Gold and sodium chloride.
Orchitic extract is of great benefit.
Phosphorus given in over-excitement should be used with care as it leads to fatty degeneration of internal organs.
Potassium bromide is highly useful in hysterical, tetanic, epileptic and other convulsions; in spasmodic diseases as chorea, insanity, acute mania, insomnia, delirium tremens, neuralgias, various vasomotor disturbances as coldness, numbness; in various distressing pricking sensations in the abdomen or epigastrium; in feeling like those of rigors, palpitation or fluttering of the heart.

Rubidium and its salts.

Silver salts as chloride, phosphate, useful in sclerosis of the nervous centre and myelitis.

Sodium phosphate used hypodermically. It has reconstructive power equal to that of animal extracts.

Spermine.

Zinc valerianate in pill of special value.

External remedies.—Actual cautery, blisters, dry cupping, baths with potassa sulphurata, counter-irritants as alternate application of heat and cold, electricity—galvanic, faradic, shower baths in functional nervous disorders.

Formula.—Mixture: Spt. ammon. aromat., 3 drs.; spt. chloroform, 2 drs.; ferri et quiniæ citratis, 30 grs.; liquor strychniæ, ½ dr.; tinct. zingiberis, 2 drs.; aqua, 8 ozs. Dose—½. For hypochondriasis or mental despondency.

2. Spiritus etheris, 3 drs.; spiritus chloroform comp., 1 dr.; acid hydrocyanic dil., 5 ms.; liquoris morphiæ sulphatis, 1 dr.; tinct. cardamomi comp., 6 drs.; aqua, 6 ozs. Mix. Dose—½ for nervous cough.

Neuralgia—Gastralgia—Hemicrania—Hepatalgia—Otalgia—Ovarian Neuralgia—Sciatica—Tic-douloureux—

Acetanilid monobrome as analgesic is useful in facial and intercostal neuralgia to relieve pain due to inflammation of nerves.

Acids, carbonic acid gas as spray along the painful nerve, or injected into vagina to relieve pain of uterine neuralgia; perosmic solution with glycerin hypodermically injected in inveterate cases of neuralgia; salicylic, locally 1 to 4 of lanolin in sciatica.

Agathin as anodyne and analgesic 4 to 8 grs. in sciatica.

Ammoniated copper in neuralgia of the 5th nerve.

Ammonium salts as carbonate 5 grs. in overworked and delicate; chloride 10 grs. as a diffusible stimulant in relieving facial neuralgia; valerianate in neuralgia of the face and head and also of the uterus.

Amyl nitrite by inhalation in dysmenorrheal neuralgia and in neuralgia of the 5th nerve, also in extreme pallor of the face.

Anodyne amyl colloid locally.

Antifebrin in facial or intercostal neuralgia.

Antipyrin. To reduce circulation in neuralgia of the fifth nerve associated with neuritis.

Antisepsin. Dose—5 to 10 grs. In facial neuralgia as an analgesic in neuralgia of the 5th nerve.

Arsenic alone or arsenic bromide improves the bodily nutrition; hence useful in malarial neuralgia, with throbbing supraorbital pain in angina and in trifacial neuralgia.

Asaprol in neuralgia of syphilitic origin.

Bromide of gold and arsenic is useful in obstinate facial neuralgias.

„ of iron and potassium in ovarian neuralgia.

Butyl chloride with menthol (1 to 2) as an anodyne, 5 to 10 grs., in facial neuralgia.

Carbon tetrachloride. The vapour applied locally to painful nerves.

Chloral with morphine and camphor used as a paint over the neuralgic painful part.

Chloroform internally, or by inhalation, or locally as an anæsthetic as a spray to relieve pain in uterine neuralgia, or 10 ms. of it deeply injected hypodermically in the vicinity of affected nerve.

Cod-liver oil to improve nutrition and assimilation.

Croton chloral in trigeminal neuralgia and sciatica; also in facial neuralgia due to caried tooth.

Diet, animal, fat, butter, cream, oils.

Emplastrum roborans in intercostal neuralgia.

Ether sulphuric locally as spray to the forehead in neuralgic headache due to fatigue or hypodermically injected behind the trochanter in sciatica. Given internally in visceral forms.

Ethyl bromide to relieve migraine.

Exalgin. Dose—4 grs. internally.

Ferri citras with strychnine or ferri redactum in chlorotic cases.

,, perchloride tincture 20 ms., with ergot in sciatica and in neuralgia of fifth nerve.

Freezing the part with ether or rhigolene spray.

Guaiacol as local anæsthetic painted on the nerve in sciatica, &c.

Iodides are useful in neuralgia of the 5th nerve dependent on syphilis to relieve nocturnal pain.

Methylene blue as analgesic 1 to 4 grs.

Nitro-glycerin drop doses of 1 per cent. solution gives relief.

Peronine ½ to ½ gr. as a mild sedative and analgesic.

Phenacetin 10 grs. in hysterical and neurotic forms.

Phenocoll hydrochlorate is very useful in neuralgic pains of influenza.

Phosphorus $\frac{1}{10}$ gr. is useful when neuralgia is due to depraved nutrition.

Potassium salts as bromide to relieve ovarian neuralgia. Chlorate is useful in facial neuralgia. Iodide with sarsaparilla in syphilitic cases. Salicylate locally in neuralgic headache due to gastric, cardiac, pulmonary or menstrual disorders. Citrate to regulate the kidneys.

Salicin or salicylates, salipyrin, salophen and salol in large doses is useful in tic douloureux.

Strontium bromide.

Sulphonal.

Sulphur with ferri carbonas internally or sulphur with flannel locally to envelop the painful limb.

Theine hypodermically as an analgesic very useful.

Tolypyrin or tolysol.

Tonga. Dose—10 ms. in facial neuralgia.

Warm bath or wet pack, in sciatica.

Zinc salts as cyanide, oxide, phosphide or valerianate, in facial, ovarian or uterine neuralgia, due to reflex irritation of pelvic organs.

External remedies.—Acupuncture very satisfactory, aquapuncture to relieve pain in a superficial nerve, avoid cold and damp, avoid electricity if any organic lesion exists, baths (Turkish, sand bath), blisters (flying blisters are useful), cautery (red-hot iron), Paquelin's thermo-cautery, chloroform and aconite liniment to rub to the affected area, compressed air by insufflation into the middle ear in tempero-occipital neuralgia, counter-irritation, as mustard poultice, blisters, actual cautery, electric wire brush, to relieve neuralgic pain, cupping (dry) between the shoulders, flannel clothing, galvanism (continuous), interrupted or faradic current, hot foot-bath, intense cold by spray of methyl chloride or of carbonic acid (concentrated) directed over the affected nerves, leeches, massage of nerve with glass rod in sciatica, neurectomy or excision of a nerve, neurotomy or nerve stretching, in sciatica the thigh flexed at the hip joint and forcibly extended at the knee, plasters, poultices, rest is important, absolute rest in splint as sciatica, rubefacients are useful, shampooing, spinal ice bag, thermo-cautery, wet pack is useful in sciatica.

Neurasthenia—

Acid cocodylic.

Aromatic spirit of ammonia is very useful.

Arsenic as liquor arsenicalis 3 ms. after each meal is very serviceable.

Cerebrin is very beneficial.

Chloralamide 10 to 20 grs. as a hypnotic.

Counter-irritation. Actual cautery above the spine.

Gaduol.

Gold bromide and arsenic solution 4 ms. is very useful.

Hypophosphites of lime or soda or iron alone or with strychnine is given as tonic in nervous depression and mental torpor, due to over-work or over-study.

Massage, systematic use of it is useful.

Musk as a stimulant and antispasmodic, stimulates the nervous centres when exhausted.

Orchitic extract is very useful.

Removal from home influence, cares, and associates who irritate them.

Rest cure.

Spermine.

Zinc oxide as a nerve sedative and tonic is useful in nervous irritability and depression from anxiety, worry, and over-study.

Diet.—Food that is most readily assimilable. Avoid milk, vegetables, meat.

Use artificial serum. It contains sodii phosphatis, 3 drs.; sodii sulphatis, 1½ dr.; sodii chloridi, ½ dr.; acid carbolici, 5 grs.; distilled water, 4 ozs. Dose—20 ms. Used hypodermically.

Neuritis—

Acetanilid.

Antipyrin is useful in acute cases with fever.

Antisepsin 5 to 10 grs.

Arsenic alone or with ammonium bromide is useful in relieving pain.

Gold bromide and arsenic to relieve pain.

Interrupted current in the later stage.

Massage in the later stage when there is marked atrophy and less pain.

Passive movements and extension to overcome contraction.

Potassium iodide and mercury if there is history of syphilis.

Salicylates very useful in acute cases.

Nævus—

Acid carbolic hypodermically.

,, chromic. Locally 100 grs. to 1 oz. of water used as an escharotic.

,, nitric as an escharotic used as a paint in capillary superficial nævus.

Antimonium tartaratum plaster.

Collodion flexile as a paint.

Constant pressure.

Creosote locally applied is very useful in removing nævi.

Electrolysis or galvano-cautery removes it safely, leaving a faint cicatrix and no after-pain.

Ferrum chloride useful as injection. To be avoided in nævi about the head.

Guttapercha.

Ligatures.

Mercury acid nitrate, an excellent caustic to remove nævi from the face.

Pressure.

Scarifications or short incisions.

Setons—thread passed through the nævi and kept till suppuration occurs arrests the growth.

Silver nitrate solution injected hypodermically.

Sodium ethylate liquor, an excellent caustic. It causes eschar, but no pain.

Vienna paste of caustic potash and lime.

Zinc chloride, iodide and nitrate as escharotic locally.

Nipples—Sore, Fissured and Cracked—

Acids as boric locally; carbolic 5 per cent. solution as compress; picric (1 to 60) solution for fissures or chaps; salicylic alone, a 4 per cent. solution, or with tannin and borax and vaseline as application; sulphurous acid alone as solution or with glycerin applied locally.

Alcohol, or brandy and water, used as a lotion to prevent cracking before delivery or after each suckling.

Alum as dusting powder.

Bismuth oleate locally.

,, salts, as subnitrate or subgallas, as dusting powder.

Borax alone as saturated solution or with creta preparata and alcohol or with alum, balsam of Peru and almond oil, a useful application.

Brandy, hot tea and glycerin solution as application.

Breast pump.

Chloral hydrate as poultices.

Chloroform with guttapercha application.

Collodion alone or paint very useful for protection with castor oil and turpentine.

Eau de cologne and glycerin as a good protection.

Earth moss as dusting powder.

Ferrous subsulphate solution with glycerin (1 to 3) is used as a paint for fissured nipples.

Glycerin alone or with starch or with tannin, very useful application.

Guttapercha solution and chloroform locally.

Hazeline as ointment locally.

Ichthyol with lanolin application to fissures.

Iodoform with collodion (1 in 15) locally.

Lead acetate and opium as lotion or poultice; lead nitrate (1 in 50) of glycerin or (1 in 8 of lard) as ointment.

Lime water a good application for cracked nipples.

Orthoform hydrochloride 10 per cent. solution as a dusting powder.

Silver nitrate (1 in 50) solution, used as a paint applied locally to the nipples in cases of ulceration.

Sulphuric acid with tannate of glycerin (1 to 1) with water as lotion.

Yolk of egg.

Zinc shield to wear constantly over the nipples.

Nodes—

Cadmium iodide internally.

Donovan's solution internally in syphilitic nodes.

Mercury oleate with morphine locally is very useful.

Potassium iodide as ointment also internally in periosteal thickening and nodes due to syphilis, to relieve nocturnal pains.

Nymphomania—

Acid sulphuric dilute internally if due to hæmorrhoidal congestion.

Bromide of potassium, sodium or strontium 20 grs. when there is plethora; avoid it when there is relaxation or any cerebral lesion.

Cerebrin has been given with benefit.

Orchitic extract is very useful.

Sulphur if hæmorrhoids exist.

Odontalgia—Toothache, caries of the teeth—

Acid as carbolic or nitric on cotton to plug the cavity to destroy exposed nerve.

,, hydrochloric locally and internally.

Alum and common salt, powdered, is useful if placed in the cavity if the nerve is exposed.

,, solution with nitric ether (1 to 3), an excellent application into the cavity.

Arsenious acid 10 grs. with morphia acetas 10 grs. and creosote 10 ms. used as escharotic to destroy the pulp, the nerve and to relieve the pain.

Butyl chloral hydrate as a plug if neuralgic.

Chloral alone should not be used if caries exist; with camphor equal weight, or with camphor, glycerin and carbolic acid, equal parts, applied on cotton and plugged in cavity relieves pain.

Chloroform or croton chloral alone or chloroform with creosote on lint, a good application into the cavity.

Creosote alone like carbolic acid, or with tannin, or opium, or chloroform gives great relief if placed in the cavity of a decayed tooth.

Dentifrices.

Dentine sensitive to fill the cavity.

Electricity.

Extraction of tooth.

Incisions over the gum.

Iodine tincture as a paint to remove tartar or to expose fang.

Menthol locally as plug.

Naphthalin with chloroform (1 to 12) as plug into the cavity.

Resorcin like creosote.

Sodium salicylate 15 grs., relieves toothache if due to taking cold and periostitis in which the teeth are very loose and very tender and painful when eating.

Tooth brush to remove the mucus deposits.

Zinc chloride to destroy the exposed painful pulp.

Formula.—Creosote, chloroform, ol. menthæ pip., ol. caryophilli, ol. camphor, acid carbolic, each equal part, soaked cotton to be placed in the cavity of decayed and painful tooth.

Iodoform, ½ dr.; ol. peppermint, 5 ms.; ol. bitter orange, 1 m.; ol. lemons, 2; tr. benzoin co., 1 m. Mix as a paint.

Chloroform, 3 drs.; tr. aconite, 3 drs.; tr. capsici, 1 dr.; tr. pyrethri, ½ dr.; ol. caryophilli, 4 drs.; camphor, 4 drs. Mix. Apply to the teeth and gums to prevent pain.

Arsenious acid, 5 grs.; morphia acetas, 10 grs.; oleum caryophilli, 10 ms. Mix as a plug. To destroy the irritability of the nerve.

Tinct. iodini, tinct. opii, chloroform, liq. plumbi subacetatis āā 2 drs.; upon cotton to fill the cavity.

Onychia and Paronychia—

Acid, carbolic, locally to benumb the surface during incision.

Arsenic 1 in 250 of lard is a highly useful application.

Avoid cutting the ingrowing portion.

Chloral hydrate solution as antiseptic locally applied promotes healing.

Ferri perchloridum locally.

Iodine, strong solution, locally applied subdues pain.

Iodoform with glycerin and ether, a fine application in syphilitic cases.

Lead carbonate plaster or as cushion very useful.

,, nitrate dusted over relieves pain and promotes healing.

Lint or wool under the ulcerated surface.

Liquor potassæ 2 drs. to 1 oz. on cotton wool locally applied to margin of nail and at ulcerated surface to soften the nail.

Mercury ointment followed by poultices.

Paring the nail after softening in warm water.

Silver nitrate, strong solution, in nitrous ether or with glycerin applied locally over the adjacent tissue will abort or cause resolution of the inflammation.

Sodium chloride roasted until chlorine is driven off and then with caustic soap and turpentine as a poultice to stop the pain and to abort.

Tartar emetic ointment useful to render it milder.

Ophthalmia—

Acid acetic aromatic with spiritus etheris nitrosi. Lotion in purulent conjunctivitis.

,, boric solution 15 grs. to 1 oz. of glycerin as an antiseptic collyrium in diphtheritic and catarrhal ophthalmia.

,, carbolic, 5 per cent. solution, by spray to relieve pain and photophobia.

,, carbonic, locally, in strumous cases to relieve pain.

Alum with white of eggs or with belladonna (1 to 150) locally to the temples. Alum (1 in 60) applied in catarrhal purulent ophthalmia; alum stick in granular conjunctivitis.

Antimony tart. $\frac{1}{30}$ gr. internally or as ointment as counter-irritant in strumous ophthalmia.

Argenti nitras solution, 2 grs. to 1 oz. of water locally, after a wash with a solution of common salt.

Arsenic in strumous ophthalmia complicated with skin eruptions.

Beta naphthol in purulent cases.

Bismuth as dusting powder in granular conjunctivitis or as application in catarrhal or strumous ophthalmia.

Boro glyceride (1 to 16) application in catarrhal ophthalmia in newly-born children and in chronic granulation.

Cadmium sulphate 2 grs. to 1 oz. as collyrium in catarrhal and purulent forms.

Calcium sulphide with saccharum lactis in purulent cases.

Calomel as a dusting powder in catarrhal phlyctenular ophthalmia.

Copper salts as acetate 1 gr. to 1 oz. or sulphate alone or with alum 1 gr. to 1 oz. as collyrium in catarrhal granular or purulent ophthalmia.

Eserine in purulent ophthalmia and in chronic cases.

Formaldehyde in purulent ophthalmia.

Hydrogen peroxide in purulent cases.

Iodine locally in chronic strumous ophthalmia.

Iodoform locally in gonorrhœal ophthalmia.

Iron pyrophosphatic syrup (1 in 25). Dose—1 dr. to children in diphtheritic cases.

Lead acetate as lotion (1 in 500) applied to the surface of everted lids.

Leeching in purulent cases.

Mercury bichloride lotion 1 gr. in 16 ozs. of water; or oleate and morphine locally under the lids in catarrhal cases; or red oxide 2 grs. with bals. tolut. 10 ms. and vaseline locally used in catarrhal ophthalmia; or yellow oxide, 10 grs. to 1 oz. of lard locally in catarrhal phlyctenular ophthalmia.

Resorcin in purulent cases.

Sanitas fluid in purulent cases.

Silver nitrate 3 grs. to 1 oz. as drops to abort the discharge in catarrhal conjunctivitis; 10 grs. to 1 oz. in purulent ophthalmia of newly-born children; or 20 grs. to 1 oz. in granular lids.

Sodium benzoate solution locally in ophthalmia neanstorum, or borate 5 grs. to 1 oz. as astringent catarrhal, or sulphate as a dusting powder, or chloride solution 10 grs. to 1 oz. in catarrhal ophthalmia.

Zinc salts as acetate as astringent collyrium in catarrhal cases, or chloride as collyrium 2 grs. to 1 oz. in diphtheritic and gonorrhœal ophthalmia, or oxide as solution in catarrhal form, or sulphate with alum 1 gr. to 1 oz. of water as collyrium in ophthalmia of infants.

External remedies.—Blisters behind the ears in bad cases; cleanliness; hot or cold compresses; isolation; protection to the eyes by smoked glasses; rest to the eyes; fomentation of warm water.

Opium Habit—

Ammonium bromide with sodium bromide and potassium bromide, a combination in large doses with Fowler's solution, does not depress vitality, relieves restlessness, and secures freedom from any more desire for opium; often given with spt. etheris nitrosi to eliminate the bromides rapidly.

Chloral hydrate alone or with bromide in large doses is very useful.

Gold bromide and arsenic a good tonic.

Gradual reduction of the drug.

Hot baths are useful to relieve disquiet.

Iron and strychnine mixture. Moral courage and perseverance.

Nitro-glycerin very useful. The effect is rapid, but ephemeral.

Paraldehyde 1-dr. dose is a good hypnotic, better than trional.

Sodium bromide ½-dr. dose with codeine and trional relieves restlessness and secures freedom from desire for opium.

Trional 30 grs. is a good hypnotic.

Washing out of stomach with a solution of sodium bicarbonate neutralizes hyperacidity of the stomach and thus relieves the distress.

Otalgia—

Blister or croton oil liniment behind the ear, to relieve the pain.

Chloral hydrate internally.

Chloroform as a swab.

Cupri sulphas injection (1 to 100) into the ear.

Ether vapour to tympanum.

Glycerin drops if the meatus is dry or olive oil for accumulation of wax in external meatus.

Heat, dry, locally.

Lead acetate with acetic acid and opium on cotton as an application into the ear.

Leeching behind the ear.

Mercury iodide $\frac{1}{12}$ gr. internally if pain is due to chronic catarrh.

Nasal douche—irrigation.

Silver nitrate (1 in 6) solution with a brush to the tympanum.

Soap and warm water solution injection by syringe.

Zinc oxide with starch as in sufflation.

,, sulphate with opium as drops.

Otitis—

Acid carbolic with glycerin 20 per cent. as drops, to relieve the pain.

,, monochlor acetic drops or plug with cotton.

Blister or acetum cantharides as a paint behind the ear and kept discharging in chronic cases.

Leeches behind the ear.

,, to the mastoid process or in front of the ear.

Potassium iodide, in chronic catarrh.

Otorrhœa—

Absorbent cotton to swab.

Acids, as boric, alone, finely pulverized as disinfectant and astringent or as solution locally injected or mixed with alum and lycopodium and used as dusting powder. Carbolic acid as solution (1 in 500) to remove fœtor and pus. Nitric acid as 4 per cent. solution locally. Salicylic acid 4, with acid tannic 6, and bismuth 90 or acid salicylic 5 per cent. with alum 3 per cent. and ferri sulph. 3 per cent. as dusting powder.

Alcohol with water as injection.

Alum alone as insufflation or with acetate of lead or sulphate of zinc as dusting powder.

Bismuth subgallate or subnitras as insufflation or tampon 5 per cent., introduced after syringing with a 3 per cent. boric lotion.

Cadmium sulphate 2 grs. to 1 oz. of rose water locally.

Calcii sulph. with alum and bole armenian as dusting powder.

Chloral hydrate 10 per cent. solution as drops into the middle ear.

Cotton wool as absorbent, locally, to keep pus removed from the canal.

Cuttle fish bone, garlic, rue, ptychotis ajuwan, camphor, each 90 grs., used as a dusting powder.

Fluosilicate of sodium (2 in 1,000) as solution for injection.

Hyd. bichlor. ½ gr. with acid tartaric 20 grs. and water 6 ozs. as injection.

Inflation, a useful adjunct in keeping secretions out of tympanum and breaking up adhesions.

Inspiration prolonged and then expiration with closed nostrils.

Liquor sodæ chloratæ 20 ms. to 1 oz. as an injection when the discharge is fœtid.

Mercury-brown citrin ointment locally in chronic cases.

Potassium permanganate (1 in 500) as injection, or spray, or as wash.

Resorcin 1 per cent. with cocaine 2½ per cent. locally.

Salol and camphor, equal parts, heated together, useful to relieve pain and to check inflammation.

Salicin with magnesia for insufflation.

Sanitas oil locally as a wash.

Silver nitrate solution 4 per cent. locally.

Sodii bicarbonatis or sodii chloridi as hot solution (1 to 150) to syringe.

Styrone solution 10 grs. in 4 ozs. of spirit; 1 dr. in 2 ozs. of warm water as injection.

Tannin glycerite drops especially in children.

Thymol with acid boracic 50, dusting powder.

Zinc sulphate locally 5 grs. to 1 oz.

Ovarian Affections—

Bromohæmol.

Bromides.

Bromipin.

Glycerino-phosphate.

Ichthyol.

Ovarian Neuralgia—Irritability (non-inflammatory)—

Ammonium chloride 30 grs. with aconite tincture 5 ms. internally.
Antipyrine with soda salicylate (1 to 2) internally.
Baths, hot.
Ferri iodide syrup, gold and sodium chloride, as tonic internally.
Glycerin and belladonna tampon to the os.
Hot water as vaginal injection.
Leeches over the groins or inside the thighs if pain persistent or tenderness and aching.
Liquor sedans, to relieve irritability.
Spiritus etheris compositæ 30 ms. as a palliative of pain.
Zinc bromide or valerianate to lessen irritability.

Ovaritis (acute and chronic)—

Blisters to the ovarian region or to the cervix uteri to relieve pain.
Bromine to diminish ovarian irritation.
Cohabitation avoided.
Complete rest.
Enemata of warm water, simple or medicated in subacute form, is of great use.
Gold salts useful in dropsy of the ovaries.
Ice to the painful part in acute cases.
Iodine paints to the ovarian region.
Leeches to the os.
Mercurial ointment with belladonna and camphor application to the seat of pain.
Ovarian extract is very useful.
Ovaries to be removed.
Parotid extract internally to relieve enlarged and tender ovary with menorrhagia.
Plumbi iodid, conium and belladonna pessaries each 1 dr. to 1 oz. of cocoa butter.
Potassium bromide as hypnotic internally.
,, iodid and veratria internally.
Poultices, linseed, with anodyne locally.
Ring pessaries to keep uterus fixed.
Tartar emetic ointment as counter-irritant over the seat of pain in subacute cases.
Vaginal douche, hot.

Oxaluria—

Acids as lactic to aid digestion, nitric or nitro-hydrochloric 10 ms. internally if there is malaise, depression of spirits, also if sciatica or rheumatism co-exists with oxaluria.
Calcii lactophosphate or carbonate internally.
Cold douche followed by friction over the rheumatic joints if accompanied with oxaluria.
Mineral acids to remove eructations of sulphuretted hydrogen.
,, waters.
Zinc sulphate relieves irritability of the nervous system associated with dyspepsia and oxaluria.

Ozæna—

Acid, carbolic, alone as 1 per cent. solution, or with iodine or with aqua picis as inhalation from atomizer.
,, salicylic as a wash, followed by application of calomel in powder if ulceration of the septum exists or acid alone 1 to 500 for injection as cleansing, astringent and disinfectant wash by retro-pharyngeal syringe.

Aluminum salts as sulphate as solution 1 dr. to 1 pint for irrigation; aceto-tartrate to correct fœtor; chloride as solution.

Bismuth subgallate with sulphur iodide and liquorice, or bismuth subnitras, alum, tannin and talc, or bismuth subnitrate 1 dr. with quinine 10 grs., iodoform 5 grs. and sodium biborates 1 dr. as snuff.

Bromine with alcohol as inhalation.

Calcium chloride 5 grs. or calcium sulphide 2 grs. with decoction krimeriæ 1 dr. as nasal injection.

Carbo animalis, cinchona, myrrh and caryophilli as snuff.

Glycerin and tannin by irrigation.

Gold salts are very useful in syphilitic cases.

Hydrastis fluid extract internally or locally as lotion (1 to 50).

Hydrogen peroxide solution as spray—a nice application.

Iodine solution alone or with glycerin and carbolic acid as inhalation, or iodine with ether and ol. juniper, 5 ms., for insufflation.

Iodoform 5 grs., ether 10 ms. and sanitas oil 5 ms. in vaseline 1 ounce as application.

Listerin solution for injection.

Mercury nitrate ointment in syphilitic form or the mercury red oxide 1 or calomel 1, or white precipitate 1 with sugar 60 as snuff.

Potassium permanganate solution 1 dr. to 1 pt. as spray or injection through the tooth alveolus in disease of the antrum.

Salol as insufflation is very useful.

Silver nitrate (1 in 50) as injection or locally applied behind veil of palate.

Sodium salts as chloride (1 in 150) or the concentrated solution for douche.

Strontium iodide in scrofulous ozæna.

Tannoform as dusting powder.

Thymol, with starch locally.

Pain—After-pains, chest pains, neuralgic pains, pain of rheumatism, inflammatory pains, &c.—

Acetanilid, its derivatives and allied compounds; as agathin, ammonal, analgen, analgesine, antikamnia, antikol, antinervin, antipyrin, exalgin, exodyne, febrinol, malakin, migranin, neurodin, phenacetin, phenatol, phenolid, pyretine, quinalgen, salfene, kaputin, thermodin, &c., are useful internally to relieve rheumatic pain, and that due to locomotor ataxia; locally as a dry dressing for wounds and ulcers.

Acid, carbolic, as local anæsthetic.

Antipyrin hypodermically as an analgesic is useful to relieve pain of gout, rheumatism, neuralgia, migraine, &c. It should not be given if pain be due to local inflammation.

Chloral has no direct pain-relieving power with morphine. It procures sleep and thus relieves pain. Should not be given if the heart is feeble or in old drunkards. A good remedy in pain of colic, gallstones, rheumatism, gastralgia, and cancer.

Chloroform 2 or 3 ms. locally into the ear in earache, into the cavity of the tooth in toothache; the vapour on raw cancerous surface and in uterine neuralgia used as inhalation in biliary or renal colic.

Cold, as ice application, is very useful if pain is due to inflammation.

Ether spray for local anæsthesia or as inhalation for general anæsthesia.

Galvanism of the affected nerve gives relief.

Guaiacol as hypodermic injection or locally applied with olive oil (1 to 1) or as a paint with glycerin (1 to 1). It is a useful anæsthetic in releaving pain of orchitis, tuberculosis, gout, rheumatism, sciatica, &c.

Heat. Application is useless if there is fever or the pain is due to inflammation.

Hot water bath is very useful.

Iodides as ammonium iodide 3 grs. to 1 oz. of olive oil locally to relieve syphilitic pains in the head if worse at night.

Iodoform ointment or suppository to relieve painful affection of the rectum or bladder.

Lactophenin is a useful analgesic and non-toxic.

Phenocoll hydrochloride 12 grs. as an analgesic to relieve pain of influenza, gout and rheumatism.

Warm injections to soothe the pain of cystitis, prostatitis and pain in the abdomen.

Paralysis, Paresis—

Ammonium carbonate and ammonium iodide to promote cerebral nutrition and to aid absorption of the thrombi in cases of incipient hemiplegia.

Antimoniate ointment over the great fontanelle (scalp).

Arsen-hæmol or arsenious acid in cerebro-spinal sclerosis.

Basilicon ointment.

Baths, cold showers.

Calcium lactophosphate in infantile paralysis.

Cantharis tincture in paraplegia locally to the spine.

Cod-liver oil with lactophosphate and strychnine when the nutrition is low and assimilation faulty.

Electricity, faradization of the affected muscles, localized electricity, in confirmed spinal paralysis.

Electricity to be avoided in recent cases.

Ferri et ammonia citras cum strychnine.

Galvanism is of use in hemiplegia.

Glycerino phosphates internally.

Issues and setons.

Massage is useful in infantile paralysis.

Mineral waters.

Orchitic extract is useful in general paralysis.

Passive exercise.

Phosphorus alone or with cod-liver oil or with almond oil in paralysis due to softening of the brain, in hysterical paralysis and in paraplegia due to excessive venery.

Spermine internally.

Sulphur electuary or as bath.

Paralysis Agitans—Trembling Chorea—Tremors—

Arsenic or arsen hæmol, alone or with opium and hyoscyamus.

Electricty, constant current, over the spine and along the course of the nerves.

Glycerino-phosphates.

Hypophosphites as syrup is very beneficial.

Orchitic extract is very useful.

Phosphorus in small doses with cod-liver oil is very useful.

Potassium iodide to promote absorption.

Sodium borate 15 grs. internally is very useful.

Spermine.

Sulphur baths are of great value.

Parotitis—

Avoid chill.
Diaphoretics.
Guaiacol.
Incision if suppuration occurs.
Leeches when pain is great and not relieved by hot fomentations.
Mercury, as grey powder, ½ gr. to relieve pain and swelling.
Poultices of flaxseed meal.
Purgatives, saline.
Stimulant if symptomatic or as a sequel of other diseases with adynamic symptoms.

Pemphigus—

Antipyrin internally to relieve itching.
Arsenic liquor internally 5 ms. on full stomach is very efficient in chronic form.
Cleanliness is very essential; avoid contagion.
Cold-water dressing if applied is useful.
Liquor carbonis detergens.
Liquor plumbi subacetatis or mercury bichloride as lotion or a wash.
Mercury as citrin ointment is very useful.
Potassium iodide with good simple diet and cod-liver oil is very useful.
Puncturing the blebs as soon as they are formed.
Silver nitrate 2 grs. to 1 oz. of alcohol as a paint over the excoriations after the bullæ have burst.
Zinc oxide with boracic acid and starch or buckwheat flour as dusting powder.

Pericarditis—

Ammonium carbonate or musk as stimulant internally.
Antimonialis pulvis with calomel.
Blisters, flying during the exudation stage.
Counter-irritation useful at commencement, but not in the acute inflammatory stage.
Ice to the præcordia during inflammation in the early stage.
Iodine paint over the cardiac region in the second stage.
Iron chloride tincture in large doses in the second stage.
Leeches to the præcordia.
Paracentesis by aspiration in the second stage is required.
Potassium iodide (dose—5 grs. in the second stage).
Poultices, large, hot, and repeated.
Salicin, in rheumatic variety, internally.

Periostitis—

Ammonium iodide in syphilitic cases is very useful.
Hot fomentation to relieve pain.
Incision deep and free, if great tension exists or tendency to suppuration.
Iodide of potassium in syphilitic or non-specific periosteal thickenings.
Leeches to relieve pain, if the patient is sthenic, in acute cases.
Mercury, as calomel, internally, or as oleate with morphine locally.
Poultices, hot and thin and large, frequently to be repeated after an early and free incision.

Peritonitis—Acute, Inflammatory or Puerperal—

Acetanilid, phenacetin or antipyrin as antipyretic.
Antimony pot. tart. $\frac{1}{16}$ gr. to shorten the attack and to render it more mild.
Calcis sulphurata with milk sugar ½ to ¼ gr.
Calomel with opium and belladonna.
Ice to the abdomen or internally to suck, to assuage vomiting.

Mercury oleate by inunction to absorb fibrinous exudation.
Milk injection by rectum.
Potassium permanganate.
Purgatives or aperients to be avoided if peritonitis is due to perity phlitis or to appendicitis.
Strepto croccus antitoxin very useful.
Warberg's tincture, 1 to 2 drs.

External remedies.—Blisters, counter-irritants, heat to the abdomen, steam or hot fomentation, depletives over the abdomen with tincture opii to relieve pain, injections, antiseptics very useful, iodine paint to the abdomen, ice to the abdomen, leeches in the early stage to the groins or to the anus, poultices (hot and large), rest (absolute), rectal tube through the rectum, water compress to the abdomen.

Peritonitis, Tubercular—

Antiphlogistine.
Arsenic, very useful in children with peritonitis and tuberculosis of the intestines.
Cod-liver oil inunction or friction over the abdomen is very useful.
Guaiacol carbonate.
Maragliano's serum.
Laparotomy—opening the abdomen, cleaning and draining, is beneficial.
Spermine.
Tapping gives great relief.

Perspiration, Fœtid—Night Sweats—Bromidrosis.

Acid acetic as lotion.
,, boric, solution to remove the fœtor.
,, carbolic 2, with glycerin 3, and water, for fœtid sweat.
,, salicylic alone as deodorant in solution with borax and glycerin; or acid salicylic 2 with dried alum 3 or acid salicylic with tannin, talc and starch, or with magnesium salicylate as a dusting powder.
,, sulphuric aromatic to check sweats of phthisis.
Aluminum oleate checks the fœtid sweat in the axilla and groins of children.
Arsenic $\frac{1}{60}$ to $\frac{1}{40}$ gr. in old persons with swelled feet.
Chloral hydrate (1 in 50) to remove the fœtor, used as foot-bath.
Iron salts as sulphate, arsenate or chloride with glycerin to check perspiration, locally as a paint to the soles and interdigital spaces.
Lead acetate 1. with linseed oil 1, or lead ointment locally applied round the sweating feet.
Naphthol a 5 per cent. ointment or alcoholic solution is very useful application for local sweating.
Oils rubbed on the whole body checks sweats.
Potassium salts as permanganate (1 in 500) as a wash for fœtid feet to check perspiration; tellurate and ferrocyanide.
Rest for swelled feet.
Salicin to check profuse sweats of hectic fever.
Sodium salts as bicarbonate or chloride as antiseptic solution to remove the fœtor.
Sponging with acidulated water or very hot sponging is very useful.
Zinc oleate to control fœtid sweats in the axilla or groins; also night sweats of phthisis.
,, oxide 3 grs. with extract belladonna ½ gr. at bed-time checks sweats of phthisis.

Pertussis—Whooping Cough—

Acid, carbolic, or cresylic 2 per cent. solution. The vapour is used as inhalation by steam atomizer with benefit.

,, hydrocyanic to relieve nervous sympathetic cough.

Allyl tribromidum, a nerve sedative internally 5 to 10 ms. or as hypodermic injection 2 to 3 ms.

Alum with belladonna (1 to 50) as inhalation, or 2 to 5 grs. with glycerin or honey internally after the acute stage has passed and no complication exists.

Ammonium liquor (1 in 20) as inhalation.

,, salts as bromide, chloride, to liquefy the bronchial secretion. Picric acid with ammonii murias and glycerrhiza gives relief internally.

Amyl nitrate with carbolic acid as inhalation by steam atomizer is very efficient.

Antikamnia.

Antipyrin and phenacetin very useful.

Benzol and carbolic acid as spray by a vapour atomizer to be diffused throughout the room, avoiding a light or fire as a pulmonary antiseptic.

Bromide of ammonium and potassium to relieve spasm.

Bromoform 5 to 20 ms. alone by inhalation instead of ether or chloroform or 2 to 5 ms. with glycerin and alcohol internally; local anæsthetic on the mucous membrane of the pharynx and larynx, very useful to relieve paroxysms and to reduce their number.

Cantharis vesicatoria locally in chronic stage.

Chloral hydrate in small doses in the spasmodic stage to relieve spasms.

Formaldehyde, formalin, gas from the gas works, as spray very useful.

Hydrogen per oxide 1 dr. with water 4 drs. given internally cuts short the paroxyms and lessens the duration of the disease.

Mercury salts as hydrargyri iodidum rubrum, sulphuretum or nigrum, internally very useful.

Naphthalin burned in the room is very useful as a palliative and curative.

Potassium salts as bromide with belladonna, potassium chlorate to keep the mouth and pharynx clean, potassium cyanide or nitrate by inhalation.

Resorcin in solution locally applied to the pharynx to abort the attack is a nice prophylactic for children living with those suffering from the disease.

Silver nitrate is useful after the acute stage has passed.

Zinc oxide or sulphate ¼ gr. with extract belladonna ⅙ very useful.

Formula.—Croton chloral, 30 grs.; etheris, 40 ms.; potass. bromid., 1½ dr.; tinct. belladonnæ, 25 ms.; tinct. hyoscyami, 60 ms.; syrup, 4 ozs. Dose—½.

2. Acid carbolici, 1 m.; tinct. iodinii, 5 ms.; tinct. belladonnæ, 10 ms.; alcohol, 10 ms.; syrup, 4 drs. Dose—½.

3. Aluminis, ½ dr.; ext. conii, 10 grs.; syrup rhœados, 2 drs.; aqua anethi, 3 ozs. Dose—½.

Pharyngitis—Pharyngeal Catarrh—Relaxed Sore Throat—

Acid, carbolic, with peppermint water gargle.

,, hydrochloric, locally applied in ulcerated sore throat.

Acid nitric, diluted, with cinchona infusion internally; undiluted acid applied locally to sloughs or ulcers.

Acid sulphurous, by spray, inhalation or fumigation, as an antiseptic in fœtid or ulcerated sore throat.

Alcohol, diluted, as gargle in relaxed sore throat.

Alum gargles in chronic cases.

,, with tannin, krameria, &c., as insufflation into the throat.

Ammonii acitatis liquor with guaiacum and cubeb if rheumatic or gouty tendency exists.

Ammonium chloride 2 grs. with tincture cubeb 15 ms. checks acute pharyngitis.

Antipyrin 4 per cent. as spray.

Arsenic iodide 1 gr. with milk sugar 6 grs. and water 1 ounce. Dose—1 dr. is useful in diphtheritic sore throat.

Borax with glycerin, althea and salicylate solution as gargle.

Bromine, locally, in ulcerated sore throat.

Chloral hydrate given internally or applied externally in ulcerated sore throat.

Chlorine water as gargle in malignant cases.

Copper sulphate solution, locally as spray.

Eucalyptus oil as a spray or inhalation.

Ferri perchloridum as gargle.

Glycerin with tannic acid, locally applied in chronic cases.

Glycozone locally applied in follicular pharyngitis.

Iodine tincture locally to ulcers.

Inhalation of steam or medicated vapour or of pulverized fluids by atomizer is of benefit.

Iron with quinine and strychnine as tonic.

Mansel's solution as a paint.

Mercury salts as bichloride (1 in 2,000) alone or with morphine as a gargle in syphilitic ulcers; the oleate in acute tonsillitis; or the acid nitrate locally for ulceration.

Methylene blue solution as an application in simple ulceration of the throat.

Potassium chlorate lozenges internally or with carbolic acid as a lotion or gargle, to stimulate the follicular secretions.

,, nitrate dissolved in the mouth to abort sore throat.

,, permanganate as gargle.

Resorcin strong solution locally applied is very useful.

Salol with sugar of milk internally or with peppermint as gargle.

Silver nitrate as stick locally to the diseased follicle after scraping, or solution.

,, 10 grs. to 1 oz. locally on sponge probang in the early stage or on brush or as spray in the chronic stage in sloughing or relaxation of the throat.

Sodium borate with sodium bicarbonate and carbolic acid solution as gargle or dry powder as insufflation in clergymen's sore throat.

External remedies.—Rest to voice, cultivation of beard, electric cautery, water compress round the neck.

Mixture.—Tinct. myrrh, 1 dr.; tinct. krameria, 1 dr.; honey, 4 drs.; acid muriatic dil., 1 dr.; Tr. cinchona rubra, 4 drs.; aqua, 6 ozs. In chronic sore throat. Dose—$\frac{1}{2}$ part.

Spray.—For atomization: alum, tannin, zinci sulphatis, cupri sulphatis, equal parts, in water (1 in 15) as solution.

Inhalation of steam, medicated with one of the following :—hops, chamomile flowers, opium, belladonna, conium, tinct benzoin co., or with acetic acid.

Phlebitis—Inflammation of veins—

Blisters over the course of the inflamed superficial vein.
Hamamelis, internally, very useful.
Hot fomentations and poultices.
Ichthalbin internally.
Incision of abscesses early and freely made.
Lead and opium as a wash.
Mercury—calomel or blue pill at the beginning.
Rest.
Stimulants as quinine and iron.

Diet.—Nutritious, wine if loss of blood, milk punch to combat depression, styptics to arrest hæmorrhage.

Phlegmasia Alba—Dolens—White Leg—

Acid, hydrochloric, dilute 60 ms. with barley water 6 ozs., and potassium chlorate 4 drs., taken internally.
Ammonium carbonate in full doses, to relieve prostration.
Bandaging in the later stage after acute symptoms have subsided.
Blisters in the early stage are very useful.
Douche (hot and cold) alternately in the advanced stage.
Fomentations with anodynes to relieve pain.
Hamamelis.
Leeches in the acute inflammatory stage.
Mercury oleate and belladonna equal parts as ointment is of great benefit.
Water compresses in the early stage.

Phlegmon—Erysipelas—

Acid, carbolic, 2 per cent. solution as injections very useful.
Iodine injections after evacuation.
Potassa sulphurata ½ gr. is very useful.
Silver nitrate, strong solution, to be applied in the vicinity, a good check.
Sulphides, to abort or to promote.

Phosphatic Diathesis—Phosphaturia—

Acid, lactic.
,, nitric.
Avoid drugs which are calculated to lower the vital powers, such as salines, mercury, colchicum, alkalies.
Benzoates.
Diet, generous.
Glycerino phosphates.
Hippurates.
Tonics.

Photophobia—

Arsenic liquor, internally, in strumous cases with photophobia.
Chloroform-vapour applied to the eye gives speedy relief.
Croton chloral 5 grs. in syphilitic cases in the young.
Glasses of cobalt blue.
Mercury—calomel by insufflation.
Potassium citrate very useful if given internally.

Phthisis—Acute Miliary Tuberculosis—Galloping Consumption—Chronic phthisis. The complications are hectic fever, cough, hæmoptysis, night-sweats, fainting and diarrhœa.

Acid carbolic ½ dr. with creosote 1 dr. and iodine 1 dr. in alcohol (1 to 12) to relieve dyspnœa. Lactic 10 ms. well diluted to allay cough. Phenyl acetic acid alcohol solution, to diminish cough and expectoration. Phenyl propionic acid 20 ms. in excavation cases. Salicylic acid to sweeten foul breath or fœtid expectoration. Sulphurous acid by inhalation, spray or fumigation in chronic phthisis.

Alum with ammoniæ liquor as a counter-irritant to the chest.

Ammonium salts as borate 5 grs. combined with codea, as carbonate, or as chloride with squills and senega, to allay cough. Ammonium iodide, as ointment to the chest.

Antimony tartrate ointment as counter-irritant to the chest.

Antipyrin or phenacetin in small doses is very useful for the hectic fever.

Antitoxin.

Arsenic liquor 3 ms. given internally in the early stage is very useful; to be avoided in caseous phthisis or if much hectic. It may be given by fumigation or as cigarettes. Under its use diarrhœa lessens and temperature diminishes.

Aseptolin solution hypodermically in germ infection.

Benzosol contains 54 per cent. of guaiacol. Given internally yields up guaiacol in the intestines with good results.

Calcium salt as liquor, chloride or calcium phosphate. Given to check diarrhœa in chronic cases with no fever.

Calomel with pepsin and opium, in tuberculosis.

Chloroform alone or with creosote as inhalation, short of anæsthesia or internally alone or with glycerin and honey as a germicide gives relief in the cough in fibroid phthisis and dyspnœa.

Cacodyle, an organic compound used hypodermically in cases with softening of tubercles or with excavations.

Cod-liver oil alone is used as food in chronic form with cajuput oil as an emulsion to rub over the chest combined with gentian or with lime water or with ether when the stomach is irritable. Given internally after meals with liquor ammoniæ and hot water. As a vapour used for inhalation.

Creosote 1 m. is effective in the initial stage of the disease; with arseniate of sodium and capsicum or with whisky and glycerin it promotes sclerotic changes and thus recovery may occur. It should be largely diluted, to prevent irritation, with alcohol and spirit chloroform. It may be given by inhalation in tuberculosis. With calcium hydrochlorate or with carbonate (cresotol) or as valerianate or as phosphate it is very useful to relieve cough, diminish expectoration, stop night sweats, decrease fever, increase weight, promote appetite, and improve local condition.

Dionin.

Ether or alcohol with cod-liver oil.

Eucalyptol 3 with turpentine 3, creosote 3, ether 2, iodoform ½, by inhalation. To diminish cough and fœtor.

Euphorbia pilulifera internally.

Europhen with creosote internally or as an inunction (1 to 20) of olive oil is of benefit even in the breaking-down stage.

Ferri chloridi liquor (1 dr. to 1 oz.) in profuse expectoration is locally applied in laryngeal phthisis, to diminish irritability and soothe cough.

Formalin 1 with glycerin 4 and water 40 as spray in the early stage.

Gold chloride, iodide or bromide and arsenic internally in fibroid phthisis with cavities.

Guaiacol carbonas 6 grs. very efficient, better borne than creosote in tuberculosis.

Helenin $\frac{1}{3}$ to 2 grs. internally.

Hydrogen dioxide solution 1 dr., with water 3 drs., very useful to promote digestion to increase the activity of chalybeate remedies and to relieve cough.

Hypophosphites of calcium, potassium, sodium, ammonium, and iron are nervine tonics and useful in chronic cases.

Ichthyol $\frac{1}{2}$ m. is useful like cod-liver oil.

Ichthalbin internally to regulate the digestion and increase assimilation.

Iodine tincture or ferrous iodide is useful.

Iodoform or iodole 1 gr. with lycopodium or with pepsin or pancreatin internally in bacillus tuberculosis has proved effective in destroying bacillus of tuberculosis.

Koumiss—fermented milk of cows.

Lead acetate, to check hæmorrhage and night sweats.

Malt extract alone or with cod-liver oil.

Meat, raw or peptonized, alone or with phosphates.

Mercury bichloride $\frac{1}{100}$gr. internally checks diarrhœa.

Mineral acids as hydrochloric dilute for indigestion.

Naphthol camphor 2 ms. in olive oil hypodermically is useful.

Nuclein is recommended.

Pancreatic or pepsin emulsion, with or without cod-liver oil.

Plumbi acetas, to diminish expectoration, to check hæmorrhages, and to lessen sweats.

Potassium salts as chlorate, hypophosphite, iodide, phosphate, as alterative in phthisis; tellurate is used to check night sweats.

Sanguis bovinus exsiccatus.

Sevum preparatum boiled in milk.

Silver nitrate $\frac{1}{4}$ gr. or copper sulphate $\frac{1}{15}$ oz. or bismuth 20 grs. to check diarrhœa.

Sodium salts as arsenate, benzoate, chloride, hypophosphite, phosphate, sulpho carbolate or tellurate.

Spirit frumenti with cod-liver oil and bitters after meals is very useful.

Tuberculin.

Zinc oxide 2 grs. with belladonna $\frac{1}{4}$ gr. to check hectic fever.

Diet.—Nutritious and digestible. Malt liquors better than wine or spirits. Plenty of meat.

External remedies.—Sponging the chest with whisky and alum, baths, Turkish baths to allay cough, sea bathing if no fever, and free from deposit of tubercles, blisters to the chest (flying blisters are very useful), sea voyage, enemata of starch and opium, washing out the stomach with warm water and borax, ice to the chest if the fever is very high, plaster (mustard) to the chest, setons (subclavicular), exercise (moderate), eau de cologne, acetic acid and water to the chest, inoculation of lymph from cultures of tubercular bacilli, iodine liniment painted under clavicles to allay cough and check secretion, warm clothing, climate—suitable.

Hypodermically.—Anti-phthisin serum; antituberculous serum; hypodermically or by rectum; camphor oil in case of cavities; gold cyanide; iodine with chloride of gold and sodium; compound solution containing iodine $\frac{1}{2}$ gr.,

bromine $\frac{1}{14}$ gr., phosphorus $\frac{1}{100}$ gr., thymol and menthol each $\frac{2}{3}$ gr., iodoform and linseed oil(1 in 1,000), naphthol with camphor and olive oil, iodine solution or compound tincture 1 to 4 of water; of this 5 to 10 ms. is used as intrapulmonary injection either through the intercostal spaces in front or in the axillary region.

Inhalations.—Acetophenone, acid carbolic ½ dr. with thymol ½ dr., terebene ½ dr. in hot water 20 ozs. to relieve cough and dyspnœa; acid hydrofluoric and air, acid sulphurous, aniline with 1 to 7 of eucalyptus oil, or anise, peppermint, gaultheria oils to destroy the tubercle bacilli; benzin and naphthol, bromide and naphthol, chlorine gas from chlorinated lime, chlorophenol very useful, chloroform with creosote and alcohol, iodine solution 1 to 3 ms. as antiseptic inhalation in chronic phthisis to lessen cough and expectoration, iodoform or iodine 44 grs. with creosote 4 ms., carbolic acid 4 ms., eucalyptus oil 8 ms., chloroform 48 ms. and alcohol or ether 20 ms. as an antiseptic inhalation (dose—4 drs.), thymol with borax camphor and aqua picis.

Formula.—Liniment camphor, liniment saponis, liniment belladonna, each 4 drs., ol. cajuputi 1½ dr. To apply to the chest.

Pills.—Digitalis ½, ipecac. ½, opii ½, ext. helenii 1 gr., quinine 2 grs.

Pill.—Acid carbolic 10 ms. pulv. carbo ligni ½ dr., bismuth subnitrate 1 dr., ext. colocynth comp. 12 grs., ext. hyoscyam. 4 grs. Make a pill mass. Dose—4 grs. each in harassing cough and vomiting.

Pityriasis—Pediculi—Dandruff—

Acid acetic or vinegar is very useful to kill the nits. It softens the adhesive chitin by which the ova are glued to the hair.

Alkalies in mild cases.

Arsenic and mercury iodide as a wash.

Bake clothes to destroy ova.

Baths with hard rubbing, sulphur baths.

Benzole, a nice application to destroy pediculi capitis or pubes or dandruff.

Carbolic acid with glycerin and water locally.

Cleanliness is highly essential.

Emollients, cod-liver oil locally as a coating in severe cases.

Ether as a wash over the parts kills lice.

Guard against the use of towels, brush, &c.

Ichthyol ointment.

Insect powder.

Isolation is very important to prevent infection.

Mercury, Donovan's solution, in obstinate cases, citrine ointment locally to the hairy parts of the face; corrosive sublimate 1 per cent. solution, of which 1 to 10 ozs. of water as a bath; mercury sulphate flava; colomel, 5 per cent., as ointment in ordinary dandruff; nitrate of mercury or yellow iodide 1 to 8 as ointment; hydrargyri ammonio chloridum with olive oil and tincture tolutani is useful. 5 per cent. solution of oleate of mercury in oleic acid with ether locally applied by a brush kills the ova and hence very useful in pityriasis, dandruff, &c.

Naphthol and vinolia soap (1 in 12).

Parasiticides.

Petroleum locally.

Phenyl as a wash.

Plumbi acetate liquor with glycerin and water as lotion in cases where there is inflammation.

Pumice stone locally.
Sapo viridis with alcohol and water as a wash.
Soap liniment for shampooing and for cleanliness.
Sodium chloride as a wash.
Sulphides, as potassa sulphurata, 1 dr. to 8 ozs. of lime water as a lotion.
Tar or sulphur ointment 1 dr. to 1 oz. of vaseline.
Thyroid extract as a stimulant of the cutaneous circulation.
Yolk of egg, beaten up with lime water and alcohol, a good shampooing mixture.

Formula.—Shampooing mixture containing borax, yolk of eggs with lime water, and alcohol.

2. Zinc oxide 1 dr., plumbi carbonas 1 dr., cetaceum 1 oz., olive oil 1 oz. as a paste locally applied.

Plague, Bubonic—

Alcohol may be given if there is prostration.
Ammonium carbonate in the later stage.
Antitoxin.
Calomel in full doses, followed by a saline, relieves vomiting.
Chloral 20 grs. with potassium bromide 30 grs. to relieve suffering and induce sleep.
Fresh air—abundant supply.
Glycerin clyster 2 ozs. if costiveness.
Hyoscine $\frac{1}{100}$.
Ice bags or cold to the head in headache and high fever.
Iodine liniment as paint to the indolent bubous swellings.
Liquor iodi terchloridi.
Mercuric chloride with carbolic acid and cocaine or with potassium iodide solution as injection into the gland gives relief.
Overcrowding to be avoided.
Potassium bromide 20 grs. and morphia.
Salol 10 grs. as intestinal antiseptic if diarrhœa is urgent.
Supra-renal extract.
Sponging the body with warm water to reduce the temperature better than antipyretics.
Vaccination by Haffkine's protective inoculation should be used with care.
Yolk of egg mixed with lime as a plaster to the gland.

Pleurisy—Pleuritis—Pleurisy with effusion—

Antimony tartras $\frac{1}{16}$ to $\frac{1}{4}$ gr. in the early stage, in sthenic subjects with high fever.
Antipyrin is useful to promote absorption of the effused products.
Diuretin to cause absorption of pleuritic effusions.
Guaiacol to promote absorption of effusion.
Iodine tincture as a paint to the chest one day on each wall alternately and as injection is very useful in hydrothorax and empyema.
Magnesii sulphas, concentrated solution, as a hydragogue cathartic promotes absorption.
Potassii acetate increases urinary flow and promotes absorption.
,, iodidi to promote absorption of effusion.
Sodium chloride 15 grs. internally causes absorption. When exudation is persistent, sodium chloride solution 1 in 15 of water sterilized and injected causes absorption of the effusion.

External remedies.—Tapping the chest when fluid occupies more than half the cavity, turpentine stupes, water (wet pack to the chest during

inflammation), thoracentesis by aspiration between the 7th and 8th rib if there is chronic effusion, bandage (4 inches broad), blisters (to be avoided during the inflammatory stage), blood letting by cupping or leeches, counter-irritation to relieve pain, compression of the healthy side of the chest, cotton jacket. fomentation by flannel and hot water, ice poultices or jacket poultices (large, hot and frequent, covered with belladonna or poppy extract), plaster (mustard), strapping the affected side of the chest.

Formula.—For dry pleurisy—Tr. veratri viridis, ½ dr.; potassii acetatis, 4 drs.; morphiæ acetatis, ½ gr.; potasii citrates, 2 drs.; syrupi tolutani, 4 drs. aqua, 6 ozs. Mix. Dose—½.

Pleurodynia—Intercostal Myalgia—Intercostal Neuralgia—

Acupuncture.
Blistering is often very useful.
Chloral hydrate made liquid with equal weight of camphor rubbed gently gives relief.
Emplastrum roborans.
Ether spray is very useful to remove the pain.
Glycerole of chloral and camphor, is useful in intercostal neuralgia.
Iodine ointment or paint applied to the chest gives relief.
Menthol useful in intercostal neuralgia.
Nerve stretching.
Poultices (very hot) are useful, to be renewed from time to time.
Rest obtained by applying strips of plaster to the chest.
Sodium salicylate 15 grs. internally.

Plumbism—Chronic Lead Poisoning—

Acid sulphuric diluted.
Anodynes, to relieve colicky pains.
Electricity if paralysis occurs.
Magnesii sulphatis with dilute sulphuric acid to remove lead from the intestines.
Potassium iodide with bromide.
Potassa sulphurata baths (1 oz. to 1 gallon).

Pneumonia—

Acid nitro-hydrochloric dil. in the later stage and in asthenic patients.
Ammonium salts as the bromide, the chloride, or the carbonate 3 to 5 grs., or the aromatic spirit ½ dr. is given during crisis or if great depression.
Antipyrin 8 grs. with morphine $\frac{1}{10}$ and camphor 2 grs., to reduce pyrexia, in catarrhal or croupous pneumonia.
Calomel of exceptional value, calomel with camphor and opium or with antimony and henbane. In olive oil it is used hypodermically in fibrinous pneumonia.
Copper acetate.
Diet, mucilaginous drinks and starchy food.
Ethyl iodide 5 ms. by inhalation during the catarrhal stage.
Eucalyptus useful in gangrenous cases.
Iodides, ammonium iodide with arsenic to prevent caseation of inflammatory products.
Phosphorus is useful if low typhoid or nervous symptoms appear.
Potassæ liquor. Dose—10 ms. in advanced cases, with sputum scanty and viscid.
Sodium carbonate or iodide or paracresotate or sodium salicylate with caffein internally in the catarrhal form.
Tartar emetic as ointment or internally at the commencement with alcoholic stimulants in the weak; it may benefit young and robust subjects.

External remedies.—Antiphlogistine, a preparation composed of acid boracic, acid salicylic, iron carbonate, glycerin, gaultheria, peppermint, eucalyptus and iodine combined with dehydrated oxide or silicate of magnesia and alumina. Used as a poultice.

Baths (cold bath), bleeding, blisters to lessen the pain at the very beginning or at crisis (to be avoided in the inflammatory stage), compresses (cold), cupping (dry), inhalations (chloroform, to relieve cough), ice bags, ice poultices, inhalation (oxygen, or hot steam), rest in warm room, sponging (cold), strapping the chest, wet pack to the chest tightly pressed to prevent motion of chest wall.

Polypus (Nasal—Uterine)—

Acid, acetic glacial, used as injection into the polypus will cause it to shrivel up and to drop off.
,, carbolic and glycerin locally.
,, chromic and tincture of iron locally.
Alum locally to point of origin after removal to prevent recurrence.
Iron chloride solution applied interstitially.
Sodium ethylate with alcohol 1 to 8 solution as caustic.
Surgical operation—to be seized with a pair of forceps and twisted off at the neck.
Zinc chloride injected interstitially into naso-pharyngeal polypus.

Pregnancy Disorders—

Alum, tannin or catechu used in the form of pessaries if there is profuse vaginal leucorrhœa.
Bismuth, calumba, and antispasmodics with opium for gastralgia, gastrodynia, pyrosis, &c.
Calcium phosphate given during pregnancy has influence on the fœtus, so that mothers may bear healthy children if former ones were rachitic or scrofulous.
Diet—Milk is the best diet for albuminuria.
Enema very useful.
Injections to be used with great care, as they often lead to uterine contractions.
Iodine tincture internally for cardialgia.
Mercury, blue pill, to correct clay coloured stools.
Potassium acetate with liquor ferri et ammoniæ acetatis is useful if there is anæmia with albuminuria.
,, bromide and chloroform as an antispasmodic to relieve dyspnœa.

Prolapsus ani—

Acid carbolic, hypodermically into the ischio-rectal fossa in prolapsus ani.
Alum in solution 6 grs. to 1 oz. locally applied with benefit.
Electricity.
Ferrous sulphate 15 grs. to water 2 ozs. as an enema.
Ice locally when the parts are inflamed.
Incision.
Iron perchloride tincture injection (1 in 8) into the rectum.
Sulphur is of benefit as a laxative and also relieves prolapse.

Prolapsus uteri—

Alum solution 6 grs. to 1 oz. locally or as a hip-bath; 1 lb. to 1 gallon of water as a vaginal douche.
Astringents.
Bromide of potassium.
Electricity.
Glycerin tampon.
Ice locally to the parts if inflamed, generally applied to the spine.
Pessaries or mechanical support of some kind give temporary relief.

Prostate (Hypertrophied—Enlarged)—

Alkalies as liquor potassæ or as alkaline salts, potassium citrate or potassium acetate if there is irritation of the bladder with acid urine, ammonium benzoate for cystitis with alkaline urine, is very useful internally.

Castration is often resorted to.

Iodine injection through the rectum or a weak iodine ointment applied by rectum.

Iodoform suppository in the rectum.

Testicles dried, given internally.

Prostatitis—Follicular Prostatitis or Prostatorrhœa—

Ammonium chloride with conium internally.

Borax and glycerin to wash out the bladder.

Cantharides tincture 1 m. alone internally or with collodion as a paint on one side of perineum in prostatitis.

Chalybeate tonics with quinine and strychnine.

Goulard's extract for injection 1 dr. to 10 ozs. of water.

Iron perchloride tincture if much debility in prostatorrhœa.

Potassium salts as the bromide alone or with atropine relieves irritability and excitement. Potassium iodide with hyoscyamus internally or with iodine tincture as solution for injection into the rectum. Potassium iodide with potassium bromide and belladonna as injection into the rectum.

Silver nitrate solution 5 grs. to 1 oz. applied to the prostatic urethra in chronic prostatitis.

External remedies.—Bougie (locally introduced), flying blisters on each side of the raphe of the perineum in chronic prostatitis, catheter aseptic soft for enlarged prostate, avoid cold and exposure, cautery, electricity, hot injections to relieve pain, horseback exercise (avoided), leeches to the perineum, venery (avoided), rest in bed, incision (perineal), suppository iodoform for the rectum, avoid condiments and alcohol, cold water as injection or as douche.

Prurigo—Papular Eruptions—

Acid carbolic alone given internally or with thymol as lotion, spray ointment or as soap is useful in prurigo senilis.

Aluminium nitrate 4 grs. to 1 oz. as injection in prurigo on the vulvæ.

Ammon. ichthyolate 1 to 6 of lard as ointment in prurigo scroti.

Antipyrin is useful, given internally.

Arsen hæmol or arsenic liquor 5 ms. internally is useful.

Baths—Turkish baths after anointing the skin, alkaline baths followed by a carbolized ointment.

Borax, a saturated solution, 10 grs. to 1 oz. of hot water is very useful in pruriginous eruptions on the mucous membrane of vulva and vagina.

Calomel ointment in prurigo affecting anus.

Chloral with camphor and petroleum.

Chloroform ointment as inunction.

Creolin ointment.

Creta gallica or creta preparata as dusting powder.

Cyanide of potassium as lotion or ointment.

Electricity when prurigo is due to alteration in the cutaneous nerves.

Hot water as a wash.

Iodoform with cerate as ointment.

Mercury oleate with morphine.

,, bichloride 20 grs. with ammonium chloride 30 grs. and water 1 pt. used as a lotion to allay itching in prurigo in the armpits.

Sodium carbonate or salicylate 3 per cent. solution locally as a wash.

Sulphides as potassa sulphurata as ointment with tar and benzoated lard is very useful.

Pruritus ani—Vulvæ and Pudendi. Compare Eczema—Scabies—Erythema—Lice—Pediculi—Urticaria.

Acid boric 4 drs. to 1 pint of hot water as lotion or as ointment 1 in 8 of lard or glycerin. It is used in the diabetic form of pruritis pudendi, also in pityriasis of the scalp.

,, carbolic alone internally or with glycerin and water as lotion or with glycerin as ointment relieves itching in pruritus ani, et pudendi, scrotal eczema.

,, salicylic as ointment to relieve itching of pruritus ani et vulvæ.

Alkalies, or alkaline sulphides as lotion or alkaline baths, locally, followed by an application of carbolized ointment.

Alum as tampon or alum with zinc sulphate as solution for pruritus vulvæ.

Aluminii nitras (1 in 80) as injection or wash.

,, murias with white hellebore and lard as ointment.

Antipyrin given internally relieves itching, hence useful in nervous pruritus, urticaria, lichen, erythema, pemphigus vulgaris and lichen.

Arsenic liquor alone or with iron or arsen hæmol given internally relieves itching of the nose accompanying asthma.

Benzoin tincture compound as a paint very useful.

Bismuth salicylate and starch, as dusting powder.

Chloral hydrate with camphor makes a liquid which with vaseline forms useful ointment.

,, with carbolic acid and vaseline (1 to 8) is used as an ointment locally added to dusting powders or used as an insufflation it allays heat and itching.

Chlorine—liquor sodæ chloratæ (1 in 16) diluted is used locally in pruritus ani.

Chloroform ointment (1 in 8 of lard) or chloroform with almond oil applied locally allays itching.

Corrosive sublimate with alum and starch (1 in 2,500) or with ammonium muriate or with acetic acid (1 in 40) is used as a lotion in pruritus vulvæ or to destroy lice.

Electric current.

Ichthyol with alcohol locally.

Iodine inhalation is useful in itching of the nose or inner canthus.

Iodoform etherial solution or as spray or as ointment (1 in 8) of lard is useful.

Lead acetate with glycerin as paste or the liquor diluted as lotion with hyoscyamus, used locally to relieve itching of urticaria, pruritus pudendi, especially when the mucous membrane is red and excoriated.

Menthol is very useful.

Mercury salts as calomel ointment is a good application, or bichloride or calomel with lime water as black or yellow wash is very useful in pruritus ani and in pruritus vulvæ et ani. Nitrate of mercury as ointment in pruritus vulvæ. Donovan's solution internally is useful. Mercury oleate 5 per cent. solution with morphine and ether is useful locally applied with a brush. Hydrargyri sulphureti rubri with sulphur and opium is used locally in itching.

Piperazine internally gives relief in pruritus due to uric acid diathesis.

Sulphur iodide with hydrargyri ointment locally.

Tonics general and nerve tonics as phosphorus, cod-liver oil, &c.

Potassium salts as carbonate 3 drs. to 4 ozs. of water as lotion. Potassium cyanide as ointment (1 to 8) of lard or as lotion 1 dr. to 1 pt. of water for pruritus; to be avoided if there is abrasion of the skin. Potassa sulphurata 1 to 100 of water as a bath.

Resorcin alone in solution or with glycerin and water applied locally gives relief.

Silver nitrate solution 20 grs. to 1 oz. of water very useful as a paint over the affected part in pruritus vulvæ.

Sodium salts as biborate 4 drs. and morphia 8 grs. as dusting powder; bicarbonate in solution 1 dr. to 1 oz. as lotion locally.

Sodium hyposulphite with carbolic acid, glycerin and water locally; sodium salicylate 10 grs. internally in pruritus vulvæ if due to diabetes.

Sulphur with oxide of zinc and opium or with almond oil as application in pruritus of the scalp.

Thymol with brick clay and vaseline applied locally.

Tumenol as oil or powder dissolved in alcohol, ether and water or with glycerin is locally applied.

Formula.—Paint.—Mercury bichloride, 5 grs.; bismuth oxidum, ½ dr.; acid hydrocyanic dilute, ½ dr.; lime water, 8 ozs. Made warm and applied.

2. Inunction.—Chloroform, 2 drs.; liq. plumbi subacetatis, 2 drs.; camphor pulv. 20 grs.; morphia acetas, 2 grs.; hydrarg. ammon. chloridum, 10 grs.; spermaceti, 2 ozs.

3. Lotion.—Hydrarg. perchl. 10, ammon. chlorid 60, acid hydrocyanic dil. 100, morph. hydrochl. 5, almond mixture, spirit rosemary and water.

4. Injection or wash.—Sodii biboratis, 6 drs.; camphor, 1 dr.; oleum gaultheriæ, ½ dr.; aqua, 4 ozs.

Psoriasis—

Acid carbolic 1 to 4 of lard as ointment.

,, chromic (1 to 50) locally in psoriasis of the tongue.

,, nitric and nitro-muriatic internally if due to imperfect digestion and assimilation.

,, salicylic, as ointment.

Ammonium iodide, chloride and carbonas.

Aristol, an excellent application.

Arsenic alone as liquor, or arsenic salts as arsen hæmol internally or with hydrargyri iodide and extract dulcamara or with mercuric iodide as solution or arseniate of soda internally but never on empty stomach.

Baths—Turkish baths, alkaline baths, sulphur baths, warm baths after inunction with oils and fats to lubricate the skin.

Carbonis detergens liquor as lotion.

Copper sulphate solid locally applied to the spots.

Electricity—constant current.

Exercise in the open air.

Gold preparation is useful in squamous skin affections.

Hydroxylamine hydrochlorate with carbonate of calcium solution used locally.

Ichthyol locally, very efficient.

Lead acetate or iodide with glycerin or with cerate as ointment locally.

Mercury salts as the bichloride as baths; mercury oleate or calomel with mercuric nitrate ointment or with unguentum hydrargyri oxide rubri mixed with tar ointment is a very useful application in patches of obstinate psoriasis on hands.

Naphthol sulphur soap or naphthol ointment for the psoriasis of the scalp, face and hands.

Oils—cod-liver oil, &c., used both internally and externally, very useful in strumous cases to lubricate the skin.

Phosphorus is a good substitute for arsenic.

Pyrogallol pomade (1 to 15).

Rest is essential.

Silver nitrate locally in psorasis of the tongue and buccal mucous membrane.

„ chloride ointment (1 in 60).

Sulphur with althea or sulphur iodide 1 to 6 grs. internally or as ointment locally is very useful in chronic form.

Sulphuris hypochloritis 1 in 8 as ointment.

Thyol in a dry form as a dusting powder is very useful—better than ichthyol.

Thyroid extract internally is very useful.

Diet.—Nourishing, frequently given in small quantities, vegetables given in moderation.

Ptyalism—Simple Hydrargism—Chronic Mercurial Poisoning—

Acids as astringents in small doses given internally.

„ sulphuric with cinchona decoction internally as gargle in mercurial ptyalism.

Alcohol diluted as a gargle.

Alum and tannin.

Astringents in excessive mercurial ptyalism when the gums are swollen and excoriated.

Borax and glycerin applied locally with benefit.

Chlorinated lime or soda, in weak solution, to remove fætor.

Cobweb saturated with alum water locally to the gums.

Cessation of mercury internally or locally.

Iodine tincture to paint the gums or 1 in 30 of water as a gargle.

Potassium salts as bromide with belladonna or hyoscyamus very useful in salivation of pregnancy, potassium chlorate 1 dr. to 6 ozs. as gargle in mercurial and simple form or 10 to 28 grs. internally, potassium permanganate solution, potassium iodide internally in mercurial ptyalism sometimes.

Zinc chloride 2 grs. to 1 oz. as gargle.

Formula.—Potassii chloratis, 4 drs.; iodii biboratis, 2 drs.; alum powder 2 drs.; potassii permanganatis, ½ dr.; tr. cinchon. co., 8 drs.; tr. myrrh, 8 drs. tr. capsici, 8 drs.; tr. krameriæ, 8 drs.; aqua, 8 ozs.—As a mouth wash.

Puerperal Convulsions—

Amyl nitrite by inhalation should be used with caution as it may lead to alarming hæmorrhage.

Bromides in large doses by enema are very beneficial.

Calomel and jalap.

Chloral with bromides given as a rectal enema after the chloroform inhalation is very useful to keep up the effect.

Chloroform by inhalation, to be avoided when convulsions are due to cerebral hæmorrhage.

Chloroform and chloral internally are very useful.

Narcotics.

Nitroglycerin if albuminuria be present.

Potassium bitartrate internally many days before confinement till it brings about free action of the kidneys and bowels, will prevent convulsions.

„ bromide 1 dr. by the rectum will prevent convulsions.

Saline purgatives are useful.

External remedies.—Ice to the head, venesection is useful if there is great cerebral congestion or vascular tension as shown by red face, full pulse, pulsation of the carotids ; compression of the carotids often stops or modifies the attack. Wet pack to act on the skin for the rapid elimination of excrementitious products as urea, tyrosin, &c.

Baths (hot water), cupping (dry) over the loins, ice to the head and spine, induction of labour, rest (perfect).

Puerperal Fever—P. Septicæmia—

Acid, carbolic, 1 in 20 solution, as a preventive, to swab the uterine cavity.
Alcohol given freely is of great benefit.
Alkaline sulphites internally and locally 15 to 20 grs. of magnesium or calcium sulphite in the early stage.
Creolin 2 per cent. as injection into the bladder to prevent septic cystitis.
Curette for the uterine cavity to remove the remains of after-birth.
Diet, liquid and nourishing and stimulants.
Eucalyptus tincture of leaves, in high fever.
Ferri perchloridi tincture with quinine and strychnia.
Fomentation (hot water) as a preventive.
Hydrargyri iodidum rubrum ½ gr. internally.
Injections, intra-uterine of antiseptic remedies, but with caution.
Iodine locally to the hypogastrium.
Mercury bichloride solution 1 in 1,000 or 1 in 500 of vaseline as inunction.
Permanganate of potassium in solution as injection or internally ½ gr. given with benefit.
Poultices, hot, to the abdomen.
Resorcin, 40 grs., is very useful.
Rest and quiet and careful nursing.
Sodium salts as hyposulphis, benzoate, sulphite, sulpho carbolates.
Streptococcus antitoxin is very successful.
Thymol alone (1 in 500) as lotion or with eau de cologne to sprinkle over diapers.
Venesection, if necessary.
Warburg's tincture 4 drs. every four hours if temperature is very high.

Puerperal Mania—

Anæsthetics for inhalation as chloroform, ether, &c.
Chalybeates as ferri chloridi tincture useful in anæmic cases.
Chloral alleviates the symptoms and produces sleep.
Potassium bromide given in sthenic cases with good results.
Tartar emetic in repeated doses gives good results.
Weaning is necessary in melancholia, not so in acute mania.

Purpura Hæmorrhagica—

Acid sulphuric is of benefit.
Alum, brandy or whisky and water locally applied to the body by a sponge is useful. To be avoided if it produces chill.
Antipyrin as insufflation.
Brandy and wines are very useful.
Iron perchloride tincture if due to anæmia is useful to arrest hæmorrhagic tendency.
Ice to the abdomen.
Malt or meat extract.
Potassium salts, as chlorate, citrate, nitrate, 10 grs., is very useful.

Styptics as alum, tincture of iron, ammonio ferric alum, &c., are useful.
Suprarenal gland.
Sodii sulphatis with sulphuric acid.
Vinegar and water a good application to sponge the body.

Formula.—Tinctura ferri chloridi, 2 drs.; liquor arsenici hydrochloridi, ½ dr.; tr. zingiber, 2 drs.; quiniæ sulph., 40 grs.; acid phosphorici dilute, 2 drs.; infusum quassiæ, 6 ozs. Mix. Dose—4 drs.

Pyrosis, Cardialgia—Hyperacidity of the stomach—Acid eructations, heart burn—

Acid carbolic internally to prevent fermentation; hydrochloric dilute before meals; phosphoric dilute before meals; sulphurous dilute to prevent acid fermentation of starchy food generally before meals; may be given after meals for alkaline pyrosis.
Alkalies as ammonium bicarbonate after meals.
Avoid vegetables, pastry, new breads, &c.
Bismuth valerian with opium is useful in pyrosis.
Cerium oxalate.
Charcoal lozenges.
Creosote like carbolic acid.
Lime water.
Liquor bismuth et ammon. citr.
Magnesium carbonate, rhubarb and ginger.
Mercury if liver is deranged.
Tannalbin in hyper secretion.

Rachitis—Rickets—

Acid nitro muriatic as baths is very beneficial.
Calcium salts as bromo iodide, lactophosphate, lime water, lime carbonate often combined with cod-liver oil, calcium sulpho carbolate, calcium phosphate and ferric phosphate combined, and calcium hippurate.
Cod-liver oil as best constructive agent.
Cold sponging.
Diet, rich in phosphate of lime and other phosphatic salts, as oatmeal, fish, full mineral diet.
Ferrous iodide as syrup.
Glycerino-phosphate and hypophosphites.
Massage and passive movements.
Morrhuol.
Phosphates of potassium, sodium, iron.
Rubbing the body with salts.
Somatose.
Thymus extract is very useful.
Thyroid extract.

Rectum, Diseases of—

Acetanilid powder locally applied to ulcers and fissures of the rectum.
Iodoform as suppository to relieve pain.
Phosphorus in chronic inflammation of the rectum.
Potassium bromide 1 with glycerin 5, locally for fissures and painful growths.
Purgatives.
Sulphur alone or with senna confection relieves irritability of the rectum.
Surgical treatment:—Incision through the mucous membrane or to divide the sphincter to relieve ulcer or fissure.

Rectum, Ulceration of—

Acid carbonic, locally per anum for ulcers.

Chloroform as ointment to relieve irritable ulcer of the rectum.

Copper sulphate with opium and quinine internally and lotion locally.

Glycozone 1 in 12 of warm water used as enema to relieve ulcer and irritation of the rectum and lower guts.

Hydrastis solution to rectal fissures, fistula and prolapse.

Iodoform in suppository to relieve painful ulceration.

Mercury red oxide 1 to 8 of lard as ointment for ulcers of the rectum just within the anus.

Phosphorus internally to relieve chronic inflammation of the rectum.

Silver nitrate ¼ gr. with opium ½ gr. and quinine internally or a solution 20 grs. to a pint by enema.

Relapsing Fever—

Alcohol in some cases.

Aqua chlorini as abortive.

Calomel as a purgative if jaundice or hepatic torpor exists.

Chloral if insomnia or delirium.

Cupping or leeching if headache is severe.

Injections—ice water if intestinal or nasal hæmorrhage.

Laxatives or cathartics in the beginning.

Potassium citrate as a cooling diaphoretic.

Diet.—Milk diet; beef tea.

Remittent Fever—Bilious Fever—

Antipyrin or phenacetin alone during pyrexia to lower the temperature or combined with quinine during the remission.

Chloroform and oil for rubbing if muscular pains co-exist.

Packing is very beneficial, to be avoided if there is hepatic or splenic congestion.

Potassium salts as citrate, bicarbonate as cooling diaphoretic.

Purgatives as calomel and jalap or salines afterwards.

Resorcin.

Warburg's tincture.

Rheumatism, acute and chronic—

Acid hydriodic syrup 2 to 4 drs. relieves pain and swellings in acute and subacute forms.

,, salicylic 10 or 15 grs. or the salicylates as amylium salicylate, guaiacol salicylate, lithium salicylate, or potassium or sodium salicylate in solution with excess of alkalies is useful in sthenic cases whose stomach can bear it.

,, salicylic 2 drs., ferri pyrophosphate 1 dr., sodium phosphate 15 grs. and water 6 ozs. (dose—4 drs.), or salicylates as sodium salicylate with oxalic acid is very useful.

Acid sulphurous by fumigation to produce perspiration, to procure sleep, and thus to give relief.

Agathin as analgesic and anodyne.

Alkalies or alkaline mineral waters, or alkaline carbonate alone or with vegetable acid is very useful for flabby fat subjects until the urine becomes alkaline.

Ammonium salts as bromide 10 to 15 grs. or carbonate 5 grs. to prevent cardiac complication; benzoate, iodide, chloride, phosphate and salicylates are very useful to relieve rheumatism.

Antimonii sulphuratum in chronic cases.

Antiphlogistine.

Antipyrin, phenacetin and phenocoll highly useful to relieve pain and as a prophylactic and to reduce fever.

Arsen hæmol or arsenic and mercury iodide as solution.

Arsenic is more efficient than sulphur, in small doses is very useful.

Asaprol.

Cod-liver oil internally and externally is very useful.

Cresalol 2 to 10 grs.

Euphorin 3 to 6 grs. as analgesic.

Ferric chloride tincture useful for feeble, anæmic and nervous subjects.

Guaiacol salol.

Ice and salt locally.

Ichthyol in 10 gr. doses is invaluable as ointment 1 to 2 of lanolin or as liniment with turpentine or with a mixture of lanolin, olive oil and 30 per cent. of chloroform.

Iodine locally applied to relieve pain round joints.

Iodoform 1 to 2 grs. with reduced iron, internally.

Iron with salicylic acid prevents anæmia which results from the acid given alone.

Kairin useful to reduce the temperature.

Lactophosphate of iron, lime and quinine.

Lactopherin.

Lithium salts as benzoate, bromide is useful to relieve wakefulness and delirium in acute cases, and in the chronic form when the smaller joints are swollen and tender; iodide, carbonate or salicylate in 15-gr. doses give good results in obstinate cases after acute attacks.

Magnesii borocitras or sulphate is a useful remedy.

Mercury bichloride $\frac{1}{10}$ gr. internally, mercury oleate and morphine locally.

Nuclein is very useful.

Oil morrhuæ as inunction and internally.

Phenacetin, a safe antipyretic, alone or with salol.

Phenocoll to alleviate pyrexia is very useful.

Potassium salts as acetate is very useful; arsenite or bicarbonate, 30 grs. in solution, given till it diminishes fever and relieves joint symptoms; bromide alone or with vegetable acid is used till the urine becomes neutral or alkaline; citrate or bitartrate 20 grs. gives good results; iodide alone or with opium relieves nocturnal pains in chronic forms in strumous and syphilitic subjects. Nitrate restores saline constituents of the blood, lessens the excess of fibrin, checks cardiac complication, but often leads to collapse. Permanganate $\frac{1}{4}$ gr. contains large proportion of oxygen and thus promotes transformation of lactic into carbonic acid.

Propylamine chloride 3 grs. to relieve pain.

Saccharin.

Salicin 10 to 30 grs. with or without alkalies is very useful.

Salipyrin 10 to 15 grs. given for a long time to prevent relapses.

Salol 10 to 15 grs. given for a long time after acute symptoms have subsided, very useful.

Salophen 15 to 30 grs. is an antitoxic and very useful.

Sodium salts as acetate, arsenate, benzoate, bromide, carbonate, dithio salicylate, hyposulphite, hippurate, iodide, paracresotate, phosphate, salicylate 10 grs. internally, also as a lotion (1 in 500).

Stimulants as spirit. ammon. aromat.

Strontium salts as bromide, iodide, lactate and salicylate act strongly, but do not derange the stomach.

Sulphides as baths.

Sulphur waters locally; also internally.

Trimethylamine 4 to 8 ms. is very efficient in acute rheumatism and gout.

Urea in large doses.

Vinegar vapour bath is very useful.

Zinc cyanide and oxide.

Diet.—Very low, milk, gruel, barley water during the fever, liquid food throughout. Lemon juice freely to be used. Avoid sugar, malt liquor, wines, alcohol, coffee, animal and saccharine food, starch. Farinaceous vegetables are useful.

External remedies.—Acupuncture, alkaline baths, mineral baths, carbonic acid baths, sulphides as baths, Turkish baths, cold and warm water baths alternately, blisters small flying round joints, cold application if the skin is hot and dry and temperature high, compress ice cold, faradization, flannel next the skin—white flannel preferred, the red flannel gives rise to eruptions—galvanism, hot or wet pack, joints to be wrapped with cotton and covered with flannel, poultices, spongiopiline hot for the joints, splints to keep the painful limb at rest, steam bath by pouring water on hot bricks in a tub is very useful in muscular rheumatism.

Rheumatism, Gonorrhœal—

Ammonium chloride very useful if the muscles are affected.

Ferri perchloridi tincture internally with quinine.

Potassium chlorate internally and as urethral injection until the urethral discharge has stopped.

Potassium iodide with tonics and stimulants followed by friction, shampooing and passive movements of joints, to be avoided in the acute stage.

Rubidium iodide.

Diet.—Nutritious.

Rheumatism, Muscular—

Ammonium chloride.

Chloral with soap liniment 1 in 6 is very useful.

Diaphoretics with nitre or ammonium salts.

Dry heat to the affected and painful part.

Electricity, constant current, is of good service.

Gold bromide with arsenic is very useful.

Lithium bromide is very efficient when there is uric acid diathesis.

Potassium iodide with colchicum or quinine is very useful.

Rest in bed.

Rheumatoid Arthritis—

Arsenic-sodium arsenate 20 grs.; washing soda 4 ozs. in 1 gallon of water as a bath.

,, in small doses internally is of benefit if due to nervous affections.

Aurum bromide and arsenic useful in arthritis deformans to relieve pain, stiffness and swelling.

Cod-liver oil internally and locally is very useful.

Electricity.

Ichthyol locally 5 per cent. ointment.

Iodides very useful if due to syphilis, and to mercurial or mineral poisoning.

Iodine tincture internally better than potassium iodide.

Iodoform 10 with ether 20 and alcohol 20 as liniment used as paint by a pencil over the painful joints.

Lithium bromide in acute and chronic cases is very useful.

,, salicylate in 8-gr. doses in water is useful in acute, progressive, subacute, chronic and articular rheumatism where the joints are deformed, swollen and painful.

Methyl salicylate with colchicine.
Piperazine 15 grs. alone or with phenocoll 15 grs. is useful in gouty or rheumatic complaints for its power over uric acid or urate concretions.
Potassium bromide—to relieve severe pain.
,, iodide in large doses with guaiacum and bichloride of mercury.

External remedies.—Actual cautery to the affected joints, adhesions may be broken up under anæsthetics, cold douche, dry rubbing, flying blisters to the joints, massage in chronic cases to give relief, passive movements, baths, sulphur baths, Turkish baths.

Rhinitis—Post Nasal Catarrh—Atrophic Nasal Catarrh—Hypertrophic Rhinitis—

Alkaline solution as nasal douche.
Astringents to stimulate the mucous membrane, as nitrate of silver and starch powder, absorbent cotton, ferric alum as spray.
Caustics for the removal of hypertrophy, as acetic acid, nitric acid, nitrate of silver, electrolysis, actual cautery, galvano cautery.
Disinfectants, as chlorine water, permanganate of potash, tar water, iodoform, carbolic acid solution, listerine, benzo-boracic acid.
Douche or injections—Zinc iodide as solution (1 in 150), zinc sulph or carbolate as solution (1 in 150), ferric sulphate as solution (1 in 150), ferric chloride as solution (1 in 150), potassium chlorate as solution (1 in 50), potassium permanganate as solution (1 in 150).
Dusting powders as arrowroot, bismuth subgallas and starch, alum, tannin, zinc sulphate.
Hydrogen peroxide locally.
Sulphanilic acid to relieve posterior nasal catarrh.

Formula.—As a spray.—Iodine, 5 grs.; potas iodi, 10 grs.; zinc iodid, 20 grs.; zinc sulpho carbolate, 30 grs.; listerine, 1 oz.; aqua, 4 ozs.

Alkaline wash.—Acid carbolic, 10 grs.; sodii biboratis, 10 grs.; sodii bicarbonatis, 30 grs.; glycerin, 2 drs.; aqua, 4 drs.

Ring-worm—Inguinal—Tropical Ring-worm—

Acids as strong acetic acid may be applied to any part except the scalp, followed by boric lotion as a wash. Carbolic acid with hydrargyri nitratis or hydrargyri oxidum rubrum, sulphur and lard as ointment.
Carbonis detergens liquor as paint.
Mercury, ammonium chloride ointment, mercury bichloride alone, as lotion 1 in 250, or with iodine as an application locally; mercury nitrate ointment, or mercury oxidum rubrum ointment; mercury persulphate as lotion.
Naphthol locally 1 per cent. solution or 5 per cent. as ointment.
Salicylic acid and collodion locally.
Sulphur with ol. cadini, creta preparata and lard applied locally.

Sarcinæ Ventriculi and Torulæ Cerevisiæ (Microscopic Fungi)—

Acid carbolic internally.
,, sulphurous diluted internally before each meal.
Hyposulphites and sulphites to destroy sarcinæ and torulæ.
Potassium permanganate.
Saccharin.

Scabies—

Acids, as carbolic, vinegar and water, locally; acid oxynaphthoic with creta preparata and soft soap for rubbing; acid sulphuric dilute internally; acid sulphurous as gaseous bath.

Alkalies as soaps or ointments to remove cuticle and break up burrows.

Baking of clothes to destroy the ova.

Beta naphthol ointment 10 per cent. or alcoholic solution 5 per cent. very useful.

Calcium sulphide lotion as a bath.

Chlorine and olive oil (chlorinated oil).

Copper sulphate lotion 1 to 16 of water after the crusts are removed.

Lasophan 80 per cent. iodine, 20 per cent. locally.

Manganese dioxide 2 to 8 of lard as ointment strong.

Mercury bichloride is very efficient, but to be used with care, solution locally.

Petroleum ointment.

Potassa sulphurata (1 in 15) locally.

Sulphur 2, quick lime 1, boil together in water 10, an extemporaneous sulphide, used locally.

Sulphur, chalk, tar, soap and lard, a mixture less irritating, but more certain as an application.

Scarlet Fever—Scarlatina—

Acids, hydrochloric, internally and as a gargle; salicylic acid as an antiseptic very useful in malignant sore throat.

Acid, carboiic, 1 m. internally and as a gargle, a nice prophylactic, a good remedy to check vomiting.

Alcohol in collapse.

Ammonium salts, as acetate, benzoate, carbonate 3 grs. in milk, in feeble circulation, cyanosis and delirium.

Argenti nitras solution (1 to 16) to the throat.

Arsenic if the tongue is red and irritable.

Chloral with camphor very efficient in calming the system.

Chlorine water prophylactic in sloughing sore throat.

Ferri ammoniæ citratis with carbonate of ammonia.

,, perchloride tincture in advanced stage is of benefit when albuminuria or hæmaturia is present.

Magnesium salts, as bisulphite, hyposulphite, oxide, sulphate as purgative to prevent sore throat and other sequelæ.

Mercury as gray powder 2 grs. is very useful if tonsils are inflamed.

Potassium salts as chlorate with acid nitric or muriatic diluted gives good results. Potassium iodide in full doses is satisfactory in result. Potassium permanganate ¼ to 1 gr. internally and locally to the throat is of benefit.

Purgatives to prevent albuminuria.

Resorcin.

Salol 8 to 20 grs. internally alone, followed with solution of carbolic acid as gargles, to be avoided if there is albuminuria or other complications.

Sodium salts as hyposulphites. Benzoate has a slow but more permanent effect on fever than salicylates. Bromide with chloral if convulsions occur; sulpho carbolate as a means of introducing carbolic acid into the system, is very useful; salicylate is antipyretic.

Spiritus etheris nitrosi as a prophylactic.

Sulphur as ointment or internally.

Water.

Zinc sulphate $\frac{1}{10}$ gr. very useful.

External remedies.—Acid boric as gargle; acid carbolic 1 in 500 of water alone or with potassium chlorate as gargle; acid carbolic with sweet oil as

inunction ; acid carbolic with liquor ferri subsulphate to paint the fauces ; acid nitric, locally to the throat if sloughs form ; acid sulphurous, as inhalation or spray or fumigation in sore throat ; antiseptics as gargle or locally to the nose and throat ; baths (hot or cold) ; cold water emersion ; cold wet packing if the temperature is above 104°, urine high-coloured and scanty and rash retroceding ; cold affusion ; cold compress if the temperature is very high. Ice to relieve thirst and for sore throat ; ice bag to the head if it is very hot and to the throat ; isolation (camp) ; sponging.

Diet.—Ripe fruits, toast bread, gruel, stimulants with care, milk is best.

Sclerosis.—Cirrhosis of the Liver and Lungs—Cerebral and Spinal Sclerosis.

(Locomotor Ataxia, Paralysis Agitans, Atheroma)—

Cod-liver oil.
Gold preparations as liquor auri et arseni bromidi in all forms of sclerosis as cirrhosis of the liver, lungs and cirrhosis of the kidney.
Galvanism.
Hypophosphites.
Mercuro-iodo-hæmol.
Silver nitrate ¼ gr. with physostigma and ergot.
Spermine.
Zinc phosphidi.

Scrofulosis—Cachexia—Enlarged Glands—

Acid, cacodylic.
,, phosphoric dil. 20 ms.
Alcohol, wine, distilled spirit, beer, &c., with cod-liver oil at meals.
Ammonium iodide 3 grs. when glandular enlargement.
Arsenious acid or arsenic iodidum.
Barium chloride or sulphide with tincture of iron in females.
Blisters for enlarged glands.
Bromide of gold and arsenic in adenitis with enlargements of the neck ; or aurous cyanide.
Chalybeate waters.
Cadmium iodide.
Calcium chloride 10 grs. in milk after food ; calcium iodide (dose—¼ gr.) ; calcium lactophosphate or phosphatis precipitatus 6 grs. as a palliative for sores ; calcium sulphide $\frac{1}{10}$ gr. with sugar lactis ; given with benefit in glandular enlargements of the neck and chronic diarrhœa.
Cod-liver oil, best remedy to promote assimilation.
Excision or scraping the gland and packing with iodoform gauze.
Exercise, moderate.
Extract malt (dry).
Fats by inunction.
Ferrous iodide syrup ½ dr. in debility, emaciation, or glandular hypertrophy, a useful remedy.
Fresh air.
Hypophosphites.
Iodine with iron internally.
,, tincture or the ointment is locally applied to scrofulous glands.
Iron alone or benzoate with cod-liver oil.
,, with calcium phosphates.
Lactophosphates of lime, iron and quinine.
Phosphorus in olive oil.
Potassium iodide with potas. chlorate and pot. bicarb. internally.
Sea air and sea bathing.
Sodium iodide with magnesium bromide and calcium phosphate or ferric phosphate.
Spongia usta contains sodium iodide, magnesium bromide, calcium phosphate and ferric protoxide.
Strontium iodide useful in scrofulous otorrhœa.
Sulphides, very useful for sores, abscesses and suppurating glands.
Thyroidin.

Diet.—Light and digestible. Raw meat for children.

Formula.—Neem tel (the medicated neem oil), contains the oil expressed from the seeds of nimdo 40, haratâl 1, mansil 1, bhilamo 1, elachi 1, kumar 1, chandan 1, tagar 1, chambeli 1, water 100. Boil them together, and prepare oil in the usual way. Used as an application to suppurating scrofulous glands.

Scurvy—

Acids; vinegar in the absence of lime juice or fresh vegetables; acid hydrochloric dilute 5 ms. with fresh lemons, fresh vegetables, and fresh meat is very useful.
Alcohol diluted as gargle is useful.
Alum, a solution with tincture of myrrh as lotion for ulceration of the gums.
Ferri arsenias or perchloride tincture to check hæmorrhage.
Phosphates for assimilation.
Potassium chlorate.
Sodæ chlorinatæ (liquor) (1 to 15) of water. Application to the gums.

Diet.—Milk, vegetables, fresh meat.

Sea Sickness—

Acid nitro hydrochloric dilute 6, with hydrocyanic acid 1.
Amyl nitrite by inhalation, to be used with care.
Antipyrin.
Bromides—sodium bromide in full doses is of benefit.
Cerium oxalate.
Champagne, iced.
Chloralamide with potas. bromid.
Chloral hydrate with pot. bromide and magnesium citrate is very useful.
Chloroform 2 to 5 ms. on sugar internally.
Counter-irritation as mustard or chloroform and opium to the epigastrium.
Creosote checks vomiting.
Ice bag to the spine.
Salt and warm water.

Septicæmia—

Acid boric, a saturated solution to wounds, ulcers.
,, phosphoric, with cinchona.
,, salicylic very useful.
Alcohol—brandy.
Ammonium carbonate.
Antiseptics.
Antistreptococcic serum in puerperal septicæmia.
Chlorine water as disinfectant.
Cleanliness, thorough.
Ferri chloridum tincture internally.
Hypophosphites of sodium, potassium or ammonium.
Hyposulphites of the alkaline metals.
Immersion of the stump in hot water or of the wound in bichloride of mercury solution 1 in 10,000 as a prophylactic.
Liquor potassæ internally in chronic pyæmia.
Potassium chlorate, large doses.
,, permanganate ½ gr. internally.
Saline injections of sodium chloride 1½ per cent. into the subcutaneous cellular issue in acute septicæmia.
Salicin to reduce the temperature and to check cerebral symptoms.
Sodium salicylate with alcohol in chronic cases.
Strepto coccus antitoxin.
Sulphites as sulphurous acid.
Ventilation, free.

Diet.—Nourishing food, wines, milk, concentrated soups.

Shock—Result of Surgical Operation or Injury—

Acetum vinegar—internally or externally inhaled or applied.

Alcohol internally or by enema or hypodermically used, but its use is not encouraging, it being a vaso-motor paralyzer, it leads to hæmorrhage restlessness and weakness of the heart.

Ammonium carbonate and spiritus ammoniæ aromaticus.

Amyl nitrite and glonoin relax arterial spasms and are indicated in the early stage of shock.

Artificial heat.

,, respiration.

Cardiac stimulants.

Ether, like alcohol, by the mouth or as injection into the rectum or hypodermically.

Erythrol tetra nitrate ½ to 1 gr. as vaso-dilator like amyl nitrite.

Heat, hot room, hot bottles to the extremities and hot poultices to the heart, a good preventive of shock.

Hot water (one pint) with common salt, injected into the colon, after laparotomy. It acts as a sedative, restores fluid to the blood, and thus supports the system.

Limbs, friction of.

Musk enema.

Nitroglycerine as injection hypodermically.

Oxygen inhalation.

Position, horizontal.

Sodium chloride 1 per cent. solution in sterilized water, as a cardiac stimulant is used subcutaneously or intravenously, to raise the volume of the pulse, stimulate the heart; useful in the second stage of the shock.

Supra renal extract.

Skin Affections.—Agents which affect the skin are known as anhydrotics, emollients, irritants, parasiticides and local stimulants.

As constitutional and local remedies they are employed in the treatment of skin diseases. Constitutional remedies include *hygiene*, *out-door exercise* and *cleanliness*. As a health restorative *cod-liver oil* is especially useful. In chlorotic cases, *iron* and its preparations are very useful as in eczema, psoriasis, &c. *Arsenic* is the most valuable of all other remedies, involving especially the superficial part of the skin. It should not be given in the inflammatory stage with heat, burning and itching. *Phosphorous* $\frac{1}{50}$ gr. in the form of phosphorated oil, also *tar* and *carbolic acid* give good results in psoriasis. *Mercurials* are essential in syphilitic skin diseases, *potassium iodide* in scrofulous skin affections, lupus, &c. Antiseptics are most important agents in many forms of skin affections, of parasitic origin best given in herpes, pemphigus, psoriasis, and pityriasis; they are derived from the animal, mineral, and vegetable kingdoms, and include creosote, carbolic acid, acetic acid, &c. The mineral kingdom includes arsenic, boron, iodine, mercury and sulphur, &c. Besides these, others mostly valued are salicylic acid, boracic acid, ichthyol, naphthol.

In many forms of skin affections of parasitic origin agents used are known as parasiticides. These agents kill or destroy the animal and vegetable parasites or generally the germs infecting the skin and other accessible parts of human body. They are external applications, and used as lotions, solutions, ointments, washes, oleates, &c.

Skin Eruptions.—The result of drugs administered internally or locally applied.

Acid fruits cause acute eczema.
Antimony, locally used gives rise to vesicles, papules and pustules.
Antipyrin leads to erythema and urticaria on abdomen and thighs attended with itching.
Antitoxin diphtheritic serum causes erythema.
Arsenic leads to erythema, eczema and acts like antimony.
Borax produces papules.
Bromides lead to acne on the face and back, also pustules with echymosis, ulcers and pemphigus.
Carbolic acid causes erythema.
Chloral hydrate; erythema of the face, neck, purpurea, itching, eczema, desquamation, petechiæ.
Iodides—acne, papules, eczema, echymosis, vesicles, pustules, purpurea, rash on the face, back of the neck and shoulders.
Mercury—erythema, eczema.
Salicylic acid—urticaria, pemphigus, purpurea and vesicles.
Shellfish—urticaria.
Sulphur locally gives rise to erythema, eczema.
Tartar emetic—a rash over the whole body.

Somnambulism—Nightmare—

Attend to digestion.
Glycerino phosphate.
Potassium bromide useful in somnambulism of children allied to epilepsy, generally the result of deranged digestion and in nightmare of adults.

Diet.—Light and digestible food. Avoid late hours at meals.

Spermatorrhœa—Emissions—Impotence—

Acid phosphoric dilute with nux vomica and cantharides.
Arsenic alone or with ergot if functional and due to weak and relaxed seminal vesicles.
Bladder to be emptied often.
Bromides with camphor is useful when the genitals are relaxed.
Calcii glycero phosphate.
Cantharides 2 to 3 ms. with iron if due to deficient tone of seminal vesicles, feeble erections, torpid, sexual feeling, or to old age.
Chloral hydrate to avoid night discharges.
Cold douche or sponging to perineum and testicle.
Electricity.
Gold chloride to prevent decline of sexual power.
Iron reduced or iron arsenate or iron iodide in functional impotence in anæmic cases.
Musk.
Phosphorous, hypophosphites of lime and soda for the induced physical or mental debility.
Potassium bromide when due to plethora with persistent and painful chordee. To be avoided in debility or daily losses, combined with cold sponging and use of hard bed.
Silver nitrate solution 30 grs. to 1 oz. as a vesicant applied to the perineum or by urethral syringe to the prostrate portion of the urethra.
Spermine.
Spinal ice bag.
Testicles (dry).
Warm bath before going to bed.
Zinc oxide, or zinc phosphide. in pills $\frac{1}{10}$ gr.

Formula.—Phosphorus, 1 gr.; ext. nucis vom, 6 grs.; ferri carbonas, 30 grs.; f. pil, 24. Dose—1 or 2 pills.

Spina Bifida—

Collodion as a means of compression.
Iodine tincture with pot. iodid and water injected into the sac.
Operation as if it were a hernia.
Tapping.

Formula.—Iodine, 10 grs. ; potassii iodidi, 30 grs. ; glycerin, 1 oz. for injection.

Spinal Congestion—Concussion—

Antiphlogistic measures with rest.
Cold affusion or ice bags to the spine.
Lead and opium lotion over the seat of injury in spinal concussion.
Leeches or wet cups to the spine if the pain is persistent.
Rest is essential.
Stimulants and restoratives to treat the shock in spinal concussion.

Spinal Irritation—Inflammation involving the roots of the nerves of sensation or motion or of both—

Bag (hot water) or blisters to the spine.
Bromides as nerve sedative.
Electricity, the inverse galvanic current.
Firing by hot iron is very beneficial.
Leeches.
Phosphorus or phosphoric acid is of great benefit.
Sodium hypophosphite.
Spermine.

Spinal Paralysis and Softening—

Baths, warm bath is very useful.
Electricity, galvanic current from the spine to the nerves and muscles.
Iodide of potassium and mercury internally in syphilitic cases.
Massage in children, forcible flexion and extension to overcome rigidity.
Phosphorus, cod-liver oil as a supportive to the nerves.
Spermine.
Suspension is useful.

Spleen Hypertrophied—

Acid carbolic 20 per cent. solution and liquor arsenicalis as parenchymatous injection.
Ammonium salts as benzoas ½ dr., fluoride $\frac{1}{24}$ to $\frac{1}{10}$ gr. given in solution, ammonium iodide with arsenic are useful in chronic enlargement.
Iodine tincture internally or as paint in chronic form.
Iron salts as ferri et ammonii citras, ferri perchloridum, ferri sulphas, ferri oxypersulphate internally.
Mercury salts as hydrargyri iodidum rubrum as ointment, hydrargyri oxidum flavum ointment locally, hydrargyri sulphuretum ointment, hydrargyri bin iodidum ointment rubbed in before a hot fire in chronic enlargement of the spleen.

Sterility—

Alkaline vaginal injections or baths or vichy waters internally if sterility is due to acid discharge from the uterus which kills the spermatozoa.
Auri et sodii chloride $\frac{1}{10}$ when due to chronic metritis or amenorrhœa or ovarian torpor.
Borax as vaginal injection if secretions are acid.

Dilatation (gradual) of the cervix and os if sterility is due to obstruction of the cervix and dysmenorrhœa.
Electrical stimulant.
Ferri arseniatis ¼ gr. or ferri sulphas exec. ¼ gr. to relieve spermatorrhœa.
Intra uterine stem pessaries to stimulate the uterus.
Phosphorus $\frac{1}{100}$ gr. in spermatorrhœa.
Potassium iodide when due to syphilis.
Remedy if there is any atresia with the displacement of the uterus.

Stricture of the Œsophagus or Pylorus—Gastric Cancer—

Acid, carbolic, diluted internally to diminish sour smelling eructations.
Alkaline solution (1 in 200) to wash out the stomach with a stomach pump.
Benzene to arrest fermentation.
Food, non-nitrogenous.
Gastro enterotomy.
Nutrient enemata.

Sun-stroke—Thermic Fever—Heat Stroke—

Ammonia by the mouth or rectum or hypodermically or locally to the nostrils.
Amyl nitrite or nitro-glycerin.
Bromides for restlessness and insomnia.
Chloroform by inhalation cautiously for convulsions, also internally.
Counter-irritation, blisters to the neck and scalp.
Ether sulphuric locally to head and spine.
Free air, artificial respiration of the breathing threatens to become suspended.
Ice enemata with ginger and capsicum.
Iodides and bromides if persistent headache.
Potassium bromide in cold water by enema in delirium.
Rest absolute.
Stimulants as brandy in collapse if the pulse is frequent and feeble.

External remedies.—Hot bottles to the feet; brandy, camphor, ether, or nitroglycerin, cold by ice bag, cold affusion to relieve unconsciousness.

Suppuration—(*See* Abscess—Boils)—

Acetanilid 30 with boracic acid 10, starch 20 and carbolic acid liquid 2 applied locally is a useful dressing. It inhibits suppuration or checks suppuration if already present.
Bismuth sub-iodide as dusting powder after cleansing acts as an antiseptic and stimulant, causing healthy granulations.
Calcium sulphide ½ gr. to hasten suppuration or to arrest suppuration when threatening.
Glycozone as pus destroyer applied locally promotes healthy action and hastens cure.
Glycerino phosphates, to prevent waste.
Hydrogen dioxide solution applied locally to the boils as pus destroyer.
Manganese iodide and ferrous iodide syrup in cachexia due to suppuration.
Nuclein is very useful in suppurative disorders.
Phosphates to repair waste from suppuration.
Sulphides very serviceable.

Sycosis—

Acid boracic 1 to 6 of vaseline is very useful.
„ nitric 1 to 20 of water as a wash.
Arsenic oleate.
Donovan's solution internally.
Mercury—citrin ointment, also the oleate.
Salol as an antiseptic powder is very useful.
Sodium sulphite 1 with glycerine 8 and water 3, used locally when of parasitic origin.

Synovitis—Joint Affections—

Acid carbolic 2 per cent. solution for injection into the joint.
Ammon. chloride lotion.
Antimony with saline purgatives.
Calcium sulphide as antisuppurative.
Cod-liver oil in strumous cases.
Gaduol as alterative.
Glycerino phosphate.
Iodine painted round the joints in chronic synovitis or the solution as injection into white swelling in strumous synovitis.
Iodoform solution in ether (1 in 5), injection in tuberculous joints, also as a dressing.
Mercury—hydrargyri perchloridi internally in syphitic synovitis after the acute stage has passed.
„ oleate and morphine locally in chronic strumous synovitis to remove induration.
Potassium iodide with iron and quinine in syphilitic synovitis with cachexia.
Silver nitrate solution as a paint almost to vesication.
Stimulants freely in strumous subjects if due to slight injury.

External remedies.—Alcohol and water as evaporating lotion; bandage with cold water or strapping to cause absorption of the fluid; blisters (flying) after the acute stage; counter irritation; cupping near the joints; hot fomentations; ice; leeches to the joints; poultices; pressure; rest; shampooing; splints to keep the limb motionless in synovitis, arising from injury. In the acute stage the splint should be fastened at some distance above and below the joint; straight position; leeches to the joint or cupping near it.

Syphilis—Primary and Secondary Syphilis—Hard Chancre—

Acids as *acetic glaciale*, locally, as caustic, to syphilitic vegetations and sores. *Boric*, like benzoin, locally. *Carbolic* locally to destroy sores; condylomata as a lotion or as a bath in skin eruptions. *Chromic* 10 gr. to 1 oz. solution locally to ulcers on the tongue, palate and for nodules. *Nitric* applied early and thoroughly as cautery to destroy chancres, to be followed by black wash or given internally in the secondary form locally (1 to 4) when the gums are spongy. *Salicylic* with cannabis and collodion as antiseptics locally to warts. *Sulphuric* acid and charcoal as a paste.
Antitoxin.
Arsenic and mercury iodide as solution.
Baths, Turkish.
Bismuth and calomel as dusting powder.
Bromide of gold and arsenic in old cases of secondary and tertiary syphilis, in ulceration of the throat, ozœna, syphilitic bone diseases, trifacial neuralgia, phthisis and other late manifestations affecting the nervous system.

Cod-liver oil internally or by inunction useful after mercury and iodides in syphiloderma.

Ferrus iodide and other iron preparations as ferri potassio tart alone or with ammonia to promote constructive metamorphosis in anæmic syphilitic cases.

Iodine as gargle for ptyalism; tincture applied locally to syphilitic sores of the throat or given internally after meal where pot iodide cannot be borne.

Iodoform and starch as dusting powder over sores and ulcers.

Liquor iodi terchloride.

,, sodii chlorinate (1 to 15) gargle.

Mercury salts—mercury bin iodide $\frac{1}{32}$ to $\frac{1}{16}$ gr.; mercurious iodide $\frac{1}{6}$ to $\frac{1}{2}$ gr.; mercurous nitrate used as a caustic for sores (1 in 30) or as lotion or ointment; occasionally internally; hydrargyri oleas 5 and 20 per cent. alone or with morphia in non-ulcerated syphiloderma; hydrargyri perchloridum, or corrosive sublimate, $\frac{1}{30}$ to $\frac{1}{16}$ gr. with potassium iodide 10 grs., ammon. carbonas 3 grs. and cinchona tincture ½ dr. internally, hydrargyri flava—2 grs. to 1 oz. of lime water or 2 grs. with ½ dr. diluted nitric acid and 8 drs. tincture of myrrh in water, 8 ozs. as gargle, or as lotion; hydrargyri perchloride alone 1 in 875 of water internally; (dose—½ to 1 dr.) or the lotion 1 in 2,000 to 1 in 5,000 as a wash over syphilitic mouth lesions; hydrargyri salicylas ¼ gr. internally or with paraffin 1 in 10 for injection or alone as a dusting powder or ointment for specific sores; hydrargyri subchloridum, calomel or mercurous chloride ½ to 5 grs. internally, or as lotio hydrargyri nigra, or as calomel ointment externally as inunction; pilula; hydrargyri subchloridi composita Plummer's pill 4 to 8 grs. internally; pulvis basilicus 2 to 4 grs. internally; calomel as dusting powder with zinc oxide, starch and iodoform in condyloma; hydrargyri succinimidum as hypodermic injection in syphilis in 2 per cent. solution; hydrargyri oxidi flavi 2 grs. suspended in liquid paraffin; hydrargyri oxidi rubri locally as ointment (1 to 8) in scaly patches; hydrargyri carbolatis ⅓ gr.; hydrargyri cyanidum $\frac{1}{10}$ to ½ gr. internally or as a lotion to syphilitic sores or as intravenous injections of 1 per cent. solutions of mercuric cyanide locally for tubercles, condylomata, ulcers on tonsils and tongue; hydrargyrum cum creta with Dover's powder in primary and secondary cases; hydrargyri thymol acetas used as intra muscular injection 1 in 10 of liquid paraffin or in pills of ½ to 1½ grs.; hydrargyri naphthol acetas ½ or 1 gr. internally; citrin ointment for sores, tubercules, and indurations.

Potassium iodide with mercury in large doses given with benefit in the secondary form, also for mercurial cachexia, syphiloma of nervous system and for ulceration of the nares, palate, &c.; it is of little value in the early stage.

Pressure bandage and mercurial inunction in periostitis.

Rubidium iodide better than potassium iodide 1 oz. of 5 per cent. solution give best results. It does not derange the stomach.

Silver oxide or nitrate to ulcers in the throat, or on the tongue, never useful for chancre.

Thyroid extract.

Vapour baths.

Wet packing is useful in constitutional cases.

Zinc chloride, iodide or nitrate, locally to syphilitic ulcers.

Tabes Mesenterica—Marasmus, Scrofulosis—Tuberculosis—

Calcium chloride and phosphate.
Cod-liver oil with iron phosphate or ferrous iodide to promote assimilation.
Change of air—sea air.
Fel bovinum as a palliative is very useful.
Hypophosphites to relieve malnutrition.
Ingluvin or papsin or pancreatin or maltine.
Mercury bichloride with tincture cinchona in chronic glandular disease generally after meals.
Potassium iodide in small and repeated doses.

Diet.—Raw meat, cream, cocoa, chocolate, peptonized food.

Testicles—Compare Epididymitis—Hydrocele—Orchitis—Varicocele—

Aurum in hypochondriasis accompanying testicular disease and as a tonic in chronic and undeveloped testes.
Cold water application in neuralgia of the testes with tonics.
Corrosive sublimate with sarsaparilla or cinchona in sarcocele.
Guaiacol 1 to 8 of olive oil to relieve the pain in the testes locally.
Hot lotions or hot steam in acute cases.
Ice bag locally in orchitis.
Iodine locally to remove swelling, but not in the acute stage in orchitis; injection in hydrocele.
Mercury bichloride with cinchona or sarsaparilla in sarcocele in syphilitic enlargements and indurations of testes.
Potassium iodide in syphilitic testicle.
Pressure over the scrotum.
Sodium salicylate in gonorrhœal form to relieve pain.
Suspensory bandage and rest in orchitis, epididymitis and other affections of the testes.
Traumaticin.

Tetanus—

Alcohol to support strength to relax spasms.
Amyl nitrite as a spinal sedative is useful.
Antipyrin antagonizes the excitability of the motor nerve centres.
Bromides—potassium bromide 1 dr. with chloral 20 grs. as hypnotic.
Chloral hydrate. Dose—20 grs. with bromides or cannabis internally or as an enema.
Chloroform as an anæsthetic by friction or by inhalation.
Eserine sulphate. Dose—$\frac{1}{60}$ to $\frac{1}{20}$ of a grain in traumatic cases.
Paraldehyde 2 drs. It does not depress the heart as choral and the bromides do.
Tetanus antitoxin is very useful.
Urethane. Dose—10 grs.

Externally.—Chloroform inhalation; bath—vapour bath, warm bath; neurotomy; oxygen; ice—cold, gives temporary relief; stretching of the nerve trunk connected with the wound with a spinal cord; freezing the nerve; heat to the spine to check spasms; acupuncture on each side of spine.

Tic Douloureux—**Facial Neuralgia**—Epileptiform Neuralgia—

Acetanilid and antipyrin are useful analgesics to relieve the pain.
Ammonium chloride in large doses of 30 grs. to relieve the pain which may be more of a rheumatic than of a neuralgic character.
Arsenic hæmol or liquor arsenicalis influences nutrition and hence useful.
Blisters.
Butyl chloral hydrate with gelsimium.
Cautery in pain due to dental caries.

Chloral hydrate 5 grs. with potassii iodid 3 grs., spt. ammonia ar 12 ms., and infusion gentian 4 drs. internally.

Chloroform, a few drops injected deep into the vicinity of nerve trunk or the liniment applied with friction with benefit.

Croton chloral 5 grs. is palliative. It has special effect on the 5th nerve.

Electricity, galvanism to the 5th nerve is of benefit to relieve the pain.

Exalgin 4 grs. useful in nervous headache.

Iodides to relieve nocturnal pain if due to syphiloma of the nervous system.

Ligature of the carotids in obstinate cases.

Phosphorus $\frac{1}{100}$ gr. is useful in obstinate cases.

Salt bag (hot) to the neck.

Salicylates in large doses are very useful.

Tinea Circinata—T. Imbricata—Ringworm of the body—T. Capitis Tonsurans (Ringworm of the scalp)—Fungus is the Trichophyton Tonsurans—

Acid acetic or acetum cantharides locally to any part except the scalp.

,, boric locally to the scrotum and inner side of the thigh.

,, carbolic (1 to 8 of glycerin) or with ungt. hydrarg. nitratis and sulphur a very effectual application.

,, sulphurous fresh with glycerin is better than carbolic acid.

Arsenic iodide $\frac{1}{10}$ gr. to improve nutrition—a nerve tonic.

Baths early.

Cod-liver oil is useful in cachectic and weekly subjects.

Copper acetate ointment 10 grs. to 1 oz. is very effective.

Coster's paste—Unguentum pices cum iodi.

Exercise, outdoor.

Iodine liniment with oil of tar 1 to 4 as liniment locally.

Isolation of brushes, towels to prevent infection.

Mercury, the bichloride 1 in 250 of water as parasiticide application after depilation; calomel ointment (1 in 8); ammonium chloride ointment (1 in 40); strong citrin ointment; ointment of red oxide very useful.

Oils to facilitate removal of scabs.

Potassium sulphocyanide with glycerin and water as lotion.

Sodium chloride as ointment is very useful to be well rubbed.

Sulphites to destroy parasites are very useful.

Sulphur baths.

Diet.—Nutritive, abundant; animal fats.

Tinea Decalvans—Alopecia Areata—Baldness—Fungus is the Microsporon Andouini.

Acids as carbolic or nitric or salicylic in olive oil locally as liniment.

Ammonia liquor lotion with almond oil and spirit rosemary locally.

Antimonii tartaratum as lotion.

Arsenic liquor internally.

Cantharidal ether, with collodion locally after the fungus is destroyed.

Cantharides tincture with castor oil (1 to 8) locally. To rub into roots of hair.

Epilation and washing of head followed by eau de cologne locally.

Glycerin with pilocarpine locally.

Hydrargyri oxidum rubrum or mercury oleate locally.

Oxygen locally applied to the scalp to restore the hair.

Petroleum spirit locally.

Sapo viridis for rubbing followed by shampoo.

Shaving frequent. Clean brushes, with long bristles.

Sulphur iodide internally and externally.

Thyroid preparations internally.

Formula.—Ol amygdalæ, 8 drs. ; aq. ammoniæ, 8 drs. ; ol. rosmarini, 8 drs.; alcohol, 12 drs. ; mellis, 20 drs. ; aqua, 20 drs. Mix. Application for alopecia.

Tinea Favosa.—The Fungus is the Achorion Schonleinii—

Acid carbolic with glycerin or cod-liver oil as a local application.
Acidi sulphurosi diluti 1, sodii hyposulphitis 6, water 30 locally applied in obstinate cases as parasiticide ; should be assisted by epilation.
Epilation with care or hair to cut short.
Iron perchloride tincture with cod-liver oil internally if the disease is associated with scrofula.
Mercury salts as nitrate as ointment ; oleate as inunction ; yellow sulphate as ointment ; perchloride lotion 2 grs. to 1 oz. as application ; or 20 grs. to 1 oz. of cerate as ointment.
Oils (simple) to soften and facilate the removal of scabs.
Poultices very useful preparatory to epilation.
Sulphur iodide ointment. 20 grs. to 1 oz. well rubbed after removal of crusts, very useful.

Tinea Sycosis—Parasitic sycosis—attack hairs of the beard—Mentagra—Fungus is the Trichophyton—

Acid sulphurous with glycerin as a useful application.
Arsenic liquor 5 ms. or Donovan's solution internally ; arsenic oleate as local application.
Citrine ointment is very useful.
Copper sulphate lotion (1 in 50) of water with zinc sulphate 4 times the weight of copper sulphate.
Hair to remove with depilatory forceps.
Hydrargyri bichloride (1 in 250) of water as lotion after epilation.
Mercury oleate or yellow sulphide ointment as parasiticide.
Sulphur iodide 1 to 10 of lard as ointment.
Zinc oxide, acid tannic and starch with sulphur—ointment.

Formula.—Oleate of mercury, 1 ounce ; ichthyol, 20 ms. ; salicylic acid, 10 grs. ; oil of lavender, 2 ms. Used as ointment.

Tinea Tarsi—

Acid boric as lotion and ointment.
Blisters to temples.
Epilation, remove scabs and then touch with lunar caustic.
Glycerini plumbi subacetatis as ointment.
Hydrargyri oxidum flavum ointment.
Iodine tincture locally after removal of scabs and then apply glycerin.
Mercury, remove scabs and apply ungt. hydrarg. nitr. dil (1 to 2).

Formula.—Plumbi acetatis 1, ungt. hydr. oxid. rub. 1, zinc oxide 1, calomel ½, lard 5, cocoanut oil 5, as ointment locally.

Tinea Versicolor, Chloasma.—Fungus is the Microsporon Furfur—

Acid arseniosi internally.
,, sulphurous with glycerin or water (1 to 4) locally.
Benzol and lavender water (1 to 1) locally.
Hydrargyri bichloride and dilute nitric acid and water sponging.
Iodine locally, preceded by washing with soap and water.
Sodium hyposulphite, strong solution, locally.

Tongue Ulcers—Cracks—Fissures—

Acid chromic (1 in 40) to ulcerated syphilitic affection of the tongue.
„ nitric as caustic, locally in ulcers.
Aurum internally and locally in scrofulous subjects, in strumous ulceration of the tongue and in hypertrophy with induration.
Borax 1 m., with glycerin 10, and water 40, applied locally for cracks and fissures on the tongue.
Iodine tincture, applied locally or with honey 2 and water 7, used as a gargle in malignant ulcers on the tongue.
Potassium bromide 1 in 50 of water as a wash to soothe the morbid sensibility of the tongue.
„ chlorate 5 grs. internally or 1 in 400 of water locally applied in ulcers on tongue, or for rawness of tongue in advanced phthisis.
„ iodide in syphilitic ulcers on the tongue, or if the tongue is hypertrophied.
Silver nitrate as caustic to ulcers.

Tonsillitis—Inflammatory—Quinsy—Cynanche—

Acetanilid—antifebrin or salol internally in acute cases.
Acid carbolic with tinct. iodine and glycerin with water as gargle.
Alum, dry or in solution.
Calomel or grey powder internally when the tonsils almost meet.
Chloral hydrate with glycerin for gargle.
Emetics in the early stage will cut short the attack.
Hydrogen peroxide solution as gargle.
Iodine with tincture ferric chloride locally.
Mercury oleate and morphine in obstinate and painful tonsillitis.
Potassium iodide internally or 5 grs. to 1 oz. of water locally.
„ chlorate internally.
Salicylic acid internally and locally in acute cases.
Silver nitrate solution (1 in 50) or the stick thoroughly applied may abort if applied early. It rarely fails to prevent suppuration.
Sodium salts as biborate with potas. chloratis, tinct. capsici and tinct. myrrh with water as a gargle; bicarbonate locally by wetted finger constantly applied to the tonsils.

External remedies.—Baths, foot-bath, blisters to the neck, cold compress round the neck, electric cautery to thickened patches, ether inhalation, ice bag, ice to suck, incision of the tonsils, leeches to the angle of the jaw, poultices to the neck, steam inhalation, trachiotomy, wet pack.

Tonsils—Enlarged—

Aluminium sulphate, a saturated solution locally applied as a mild caustic.
Ammonium iodide with glycerin (1 to 15) as application by a brush.
Barium iodide locally relieves chronic induration of the tonsils.
Excision of a part or removal of the whole by guillotine.
Fel bovinum (oxgall), conium and olive oil as pigment are useful.
Ferric chloride liquor (1 to 8) of water, used as a paint over the tonsils, an effective astringent.
Iodine 2 grs. with iodide of potassium 40 grs. and water 1 ounce. Injection into the gland.
Silver nitrate locally applied with benefit.
Zinci chloride saturated solution as a caustic locally applied to each crypt by a wire cotton-holder.

Tonsils—Ulcerated—Ulcerous—

Acid carbolic alone 5 per cent. as a wash, or carbolic acid with tincture myrrh as an application by sponge to the throat.
„ sulphurous dilute and glycerin as paint or by spray.
Potassium iodide to arrest tertiary syphilitic ulceration of the tonsils.
Sodium sulphite solution (1 in 8) of water locally.

Torticollis—

Electricity, galvanization of the affected muscles and faradization of the opposite ones, gives relief if tried early.
Massage.
Potassium bromide in large doses with arsenic in the spasmodic form.
Stretching or resection of the spinal accessory nerve as a last resort.
Water, hot douche.

Tremor—Chorea, Paralysis Agitans, Delirium Tremens—

Arsenic liquor 2 or 3 ms. diluted with water (1 to 2) and given hypodermically is very useful.
Calcium salts in the early stage in tremor at the beginning of general paralysis.
Phosphorus alone, or with glycerin in tremor due to excess of alcohol or mercury.
Silver nitrate ⅛ gr. in mercurial tremor is found useful.
Zinc phosphide is effective in tremor due to mercurial and arsenical poisoning.

Trismus Neonatorum—Lockjaw of the new-born infant often caused by bathing in very hot water—

Anesthetics.
Chloral hydrate.
Ether.
Treatment of any kind is seldom effectual.

Tuberculous affections—Compare—Tubercular laryngitis, tubercular meningitis, tubercular peritonitis, tubercular phthisis, scrofulosis—Tabes Mesenterica—

Acid cacodylic.
„ lactic.
„ salicylic locally as a plaster applied to remove the horny covering in tuberculosis of the skin.
Antiphthisin is useful in pure tuberculosis.
Antitoxin Paquin's serum is useful in knee joint tuberculosis.
Arsenic is very useful in tuberculosis of the lungs, intestines and peritoneum in children.
Arsinyl.
Benzosol in diarrhœa of tuberculous subjects.
Calcii chloridum—tuberculosis.
Codliver oil is the best treatment in tuberculous diathesis.
Creosote, calcium hydrochloro-phosphate.
Iodoform 10 per cent. as an emulsion made with glycerin and olive oil is filled into the tuberculous abscess cavity after opening and scraping. It is also injected with benefit into tuberculous joints, and in local tuberculosis of soft parts as glands, testes, lungs, &c.
Mercury, acid mercuric nitrate applied to a small portion of the growth at a time as it is very painful; hydrargyrum thymol acetic in solution hypodermically injected into the glutei muscles is of benefit.

Naphtholated camphor is used hypodermically in tuberculosis of the testes and of the bladder.

Potassium cantharidinate $\frac{1}{800}$ gr. injected hypodermically produces exudation of serum through the body and may cause a concentration at the affected spot of efficacious substances which do not ordinarily find their way there. Should be avoided if there is kidney disease.

Do. iodide internally is very useful.

Spermine for injection.

Tuberculin, an agent for latent tuberculosis.

Zinc chloride solution in a diluted form 20 ms. is injected deep into the tissues, surrounding the tubercular deposit, to induce a condition of sclerosis which is fatal to the growth and existence of the bacilli—in tuberculosis of testicles (1 in 20) solution is useful. In tuberculosis of the joints, ribs, glands (1 in 10) solution of which 20 ms. are injected round the perephery of the diseased part.

Diet.—Peptonized food, wine, milk, broth, alcohol, and jellies.

External remedies.—Blisters and dry cupping very repeatedly, cold or ice to the surface of the abdomen.

Tuberculosis, acute, miliary—Tuberculosis, acute phthisis—

Acid salicylic to subdue the fever.

Alcohol, wine.

Arsenic to reduce the temperature gradually.

Blisters (flying) over different parts of the chest.

Cold water with vinegar applied to the surface of the abdomen or to sponge the body.

Cupping (dry) over lower limbs and trunk.

Ice to suck freely or iced enemata.

Milk, peptonized food, and jellies.

Tumours—Non-malignant growths—

Chloroform inhalation, a good aid to diagnose phantom tumours and deep-seated abdominal tumours when the walls are hard and rigid.

Electrolysis is used with benefit in sebaceous tumours, bornchocele, lipoma, enlarged glands.

Ferric chloride liquor, useful application to fungous or hæmorrhoidal tumours.

Galvanic current to relieve the pain, improve nutrition and diminish the size of fibroid tumours—goitre, enlarged glands, &c.

Mercuric salts as bin iodide ointment (1 in 30), mercury bichloride, mercury bromide, ½ gr. used with benefit in abdominal tumours.

Pepsin hypodermically to dissolve tumours.

Removal of the tumour.

Stypticin to check hæmorrhage.

Tympanitis—

Acid carbolic with bitter tonics after meal if due to gastric fermentation.

Aspiration or puncture only in extreme case, to relieve the gut.

Chloral hydrate or creosote as an intestinal antiseptic to prevent fermentation.

Change of posture inversion or partial inversion of the patient as in knee chest position or elevation of the foot of the bed relieves promptly by causing gravitation of the bowels upwards and straightening out the rectum.

Galvanism.

Operation—incision of the gut when cathartics, enemata, the use of rectal tube have failed.

Typhlitis—Inflammation in the cœcum—

Benzoin tincture solution for rectal injection.

Ice bag over the swelling is very useful.

Leeches to be applied at once to relieve tenderness and fever.

Magnesium sulphate may be given.

Purgatives drastics are to be avoided.

Poultices to the abdomen.

Soda biborate—solution for rectal injection.

Warm water enema.

Typhoid Fever—

Acid carbolic 5 ms. diluted per rectum

„ carbolic 1, with tincture of iodine 2, or with chloroform 2, given in drop doses, is supposed to kill the bacillus.

„ nitro-hydrochloric or sulphuric dilute 20 ms. is useful to check intestinal hæmorrhage.

„ sulphurous 2 ms.

Alcohol in the later stages to sustain the heart.

Antipyretics, as antipyrin, phenacetin, acetanilid, phenocoll hydrochlorate to lower the temperature.

Antitoxin typhoid with good results.

Astringents, as silver nitrate or lead acetate, with opium, or alum, or copper sulphate or lime water, useful for diarrhœa.

Benzo naphthol 4 grs. to prevent fermentative changes in the stomach.

Bismuth salicylate with sodium salicylate (4 to 7) or bismuth subnitrate with opium to check diarrhœa.

Calomel in 5 or 10-gr. doses at first to clear the intestines, and then repeated in 3 or 4-gr. doses for 3 or 4 days.

Calx saccharata with milk to relieve parched tongue.

Choral hydrate to relieve nervous symptoms, induce sleep, check delirium, to be avoided if the heart is weak.

Copper arsenite $\frac{1}{100}$-gr. dose if used early maintains a good pulse, low temperature, and prevents abdominal pain, diarrhœa and tympanitis.

Guaiacol 10 ms. with olive oil 1 dr. as inunction in axilla and groins to reduce the temperature. Guaiacol carbonate 20 grs. is non-poisonous, does not affect the temperature, is useful to abort.

Kairin 5 to 8 grs. as a febrifuge.

Lactophenin 5 to 15 grs. as an antipyretic.

Liquor iodi terchloride if delirium is severe.

Mercury bichloride $\frac{1}{100}$ gr. for the diarrhœa.

Naphthol benzoate as antiseptic to prevent fermentative changes in stomach.

Potassium bromide useful to abort the fever.

Resorcin to check intestinal hæmorrhage and to act as an antipyretic.

Salicin—salicylates as antizymotics.

Salol 5 to 10 grs. or salophen is very efficacious as an intestinal disinfectant.

Spirit ammonia aromatic is useful to relieve accumulation of mucus in the throat.

Stimulant freely, if joints are affected and to sustain the heart.

Tartar emetic $\frac{1}{15}$ gr. with opium $\frac{1}{2}$ gr. with cardiac tonics if delirium and insomnia be present; it cuts short the disease.

Formula.—Guaiacol carbonate, menthol, thymol, eucalyptol, calomel, podophyllin, all in combination. Used to abort the fever.

External remedies.—Abdominal compress, baths (warm or cold) to reduce hyperpyrexia, baths to promote the flow of urine and thus to diminish the toxins, cold affusion, cleanliness, enemas to relieve constipation, ice bags over the head and scalp, packing wet sheet, washing with cold or warm water, rest, sponging with warm or cold water if restlessness exists, ventilation free, water immersion.

Diet.—Milk alone, or milk with alcohol, eggs, broth, coffee as a stimulant, essence of meat; avoid solid food till the health is restored fully.

Typhus Fever—

Acids mineral, as nitro-hydrochloric dil, phosphoric dilute, are highly useful.
Antimony tart with opium in the delirium and wakefulness.
Antipyrin or phenacetin to keep down the temperature within safe limits.
Baths.
Blisters, if pneumonia supervenes.
Chloral hydrate to allay delirium and to produce sleep.
Exclusion from others is necessary as the disease is highly contagious.
Liquor iodi terchloride.
Purgatives at the onset.
Spiritus etheris nitrosi.
Sponging the body.

Diet.—Supporting, nutritious—beef tea, eggs, nutrient enemata.

Ulcers and Sores—Foul, Fœtid or Phagedenic—Gangrenous Ulcers—

Acetanilid as a dusting powder over ulcers, mucous patches, sores, and ulcers of the rectum.
Acid boric lotion for indolent ulcers.
,, carbolic, strong, alone or with glycerin (1 in 50) or with wood ashes or with salicylic and locally as a stimulant application to destroy the diseased surface in sloughing phagedena, fœtid ulcers.
,, chromic 1 in 40 locally to ulcerated gums.
,, nitric as an escharotic with a glass rod protecting the surrounding tissues with oil or with 1 to 20 of water as a good stimulating wash or lotion for unhealthy, indolent and painful ulcers.
,, pyrogallic as an ointment 20 per cent. as an application for syphilitic ulcers.
,, salicylic with carbolic acid locally or with camphor and vaseline as an ointment in foul ulcers.
Alcohol applied locally to cover sores and ulcers. It forms a thin protecting layer of coagulated albumen.
Alum burnt used as a dry powder or in solution applied to relaxed and profusely secreting sores.
Aristol as a dusting powder is very useful in old scrofulous, syphilitic and tuberculous ulcers.
Arsenic to improve rodent ulcer.
Bismuth oxyiodide or bismuth subnitrate as desiccant to ulcerous sores.
Bromine with potassii bromide (2 to 1) as lotion (1 in 6) of water, for sloughing ulcers.
Calomel ointment or black wash useful in scrofulous or tuberculous lupus and open sores.
,, as a dusting powder in ulcer of the conjunctiva.
Carbo ligni locally to foul, fœtid and gangrenous sores.

Charcoal with cinchona and iodoform as dusting powder locally to indolent or sloughing sores and ulcers.

Chloral hydrate 5 to 10 grs. to 1 oz. of water as solution or lotion for sluggish sores in ulcerated sore throat and in ulcers from any cause.

Chlorine gas or chlorine water as a local stimulant to promote healing in old sores or ulcers.

Cod-liver oil is useful in ulceration of the glands, in indolent ulcers with excoriated edges, in lupus, &c.

Collodion application as a protective covering.

Copper sulphate alone as a stick or as solution to indolent ulcers or with catechu and ghee to make ointment is used for indolent ulcers.

Gold chloride locally and internally in scrofulous ulcers.

Hydrogen peroxide, ozonic ether as a wash for profuse suppuration.

Ichthyol pure or with vaseline (1 to 2) applied to ulcers of the leg with benefit.

Iodide of starch as a poultice for sloughing sores.

Iodoform alone or with alcohol and glycerin or with cinchona as a dusting powder, useful in irritable ulcers only to relieve pain.

Kieselghar for healthy ulcers.

Lead acetate liquor diluted as lotion for indolent over-secreting sores.

Lime carbonate or lime water to check discharges, the sulphide if the discharge is thin and watery, the phosphate is useful in scrofulous sores.

Mercury salts as bichloride 1 per cent. solution as application to indolent and syphilitic ulcers.

Mercury iodide 40 grs. to 1 oz. of vaseline for syphilitic ulcers, hydrargyri nitratis ointment (1 to 2) for serpiginious ulcerations.

Methylene blue for corneal ulcers.

Naphtol camphor in tuberculous and scrofulous ulcers is very useful.

Nulcein locally applied to indolent ulcers.

Oleate of aluminium, cadmium, copper, nickel, or silver, to be dusted in chronic ulcers.

Pepsin with lactic acid locally in obstinate phagedenic ulcers.

Piperazine 1 per cent. solution locally to relieve pain and subdue inflammation in gouty sores.

Potassa fusa or a mild Vienna paste as an escharotic.

Potassium chlorate or permanganate as a powder or in solution as a wash to stimulate foul ulcers, better than iodoform.

Resin ointment with Bals. Peru locally for indolent ulcers.

Resorcin in strong or saturated solution locally applied as a caustic in syphilitic and tuberculous and other ulcerations of the larynx.

Silver nitrate sticks to ulcers of the mouth or as solution locally for chronic ulcers.

Thiol dry as a dusting powder of much use on ulcers.

Zinc chloride as an escharotic, very safe.

,, carbonate or oxide or sulphate with magn. carbonate, acid boracic and acid carbolic as dusting powder for indolent ulcers.

External remedies.—Bandaging for indolent ulcers, blisters, cleanliness, daily washing, elastic stockings, electricity, hot pack, immersion of the part in hot water, lead sheet for indolent ulcers, massage for indolent ulcers, oxygen locally, posture recumbent for ulcers of the leg, protection of the part, poultices yeast, rest is essential, strapping, section of exposed nerve filament gives relief to irritable sores.

Uræmia—Uræmic Convulsions; Uræmic Coma—

Amyl nitrite or nitroglycerin by inhalation to relieve dyspnœa.
Electricity in the hysterical form.
Ether 2 drs. internally or ½ dr. hypodermically injected deep into the muscles in uræmic dyspnœa.
Hydragogue cathartics to relieve dyspnœa.
Intestinal disinfectants as iodoform, charcoal and naphthalin to remove the toxic matter in the blood which has been re-absorbed from the bowels.
Moschus moschiferous.
Nitroglycerin to relieve dyspnœa.
Oxygen by inhalation is very successful in uræmic coma.
Saline injections (hot) into the cellular tissue in chronic nephritis with uræmia.
Salines as elaterium or hydragogues in the early stage to secure elimination by the intestines and to relieve blood pressure.
Sodium benzoate 15 grs. useful in threatening uræmia.
„ bromide with chloral in full doses as rectal enema to relieve uræmic convulsions.
„ salts in preference to potassium salts in uræmia from Bright's disease.
Venesection in sthenic cases of acute uræmia.

Diet.—Milk.

Formula.—Tr. musk, tr. castor, and ether sulph., each 1 dr. Given internally in 10-drop doses.

External remedies.—Bath—warm or vapour, hot air, hot pack to produce diaphoresis, transfusion in uræmia convulsions, free respiration, leeches to the temples to relieve headache.

Urethra, Stricture of—

Catheterization under an anæsthetic in spasmodic stricture and for gradual dilatation in organic stricture.
Electricity—a weak galvanic current with negative pole to the stricture.
Fomentation.
Oils injected before dilatation.
Through division by a dilating urethratome for a radical cure.
Warm bath.

Urethritis—

Calomel as a purge.
Hot hip bath. Urination under hot water is useful in lithiasis in males and leucorrhœa in females.
Potassium bicarbonate 10 grs. with potassium acetate 10 grs. and linseed tea internally is very useful.
Rest in bed.
Silver nitrate locally in chronic urethritis in females.
Zinc sulphate as sticks or zinc solution for injection into the urethra.

Uric Acid Diathesis—

Ammonii phosphas.
Calcii salicylas.
Magnesia.
Potassii citras.
Potassium tartro-borate.
Sodii citro tartras.
Sodium borate.

Urine, Examination of—

Urine for examination should be that passed in the morning or a sample of that passed during 24 hours.

Quantity.—Normal quantity is about 40 to 50 fluid ounces in 24 hours. It varies in health according to the quantity of sweats, and of fluid taken as food or drink. In diabetes the quantity passed is very large. In fever, in kidney disorders it is very scanty. In cholera it is sometimes suppressed.

Specific Gravity.—The normal sp. gr. is 1015 to 1025. One fluid ounce contains 18 or 20 grs. of solids. Sp. gr. is very high in diabetes mellitus and is low in albuminuria (Bright's disease).

Colour.—Pale, copious urine with a high sp. gr. indicates diabetes mellitus; pale, copious with a low sp. gr. hysteria, convulsions or nervous disease. High coloured scanty urine and high sp. gravity indicates fever and uric acid diathesis. High coloured with scanty urine and low sp. gr. indicates Bright's disease. Very yellow or greenish yellow colour indicates the presence of bile or the effect of rhubarb. Dark coloured urine and of the odour of violets indicates the presence of turpentine. Dark, muddy and smoky urine, the presence of blood or the result of drinking strong coffee. Black urine indicates disintegrated blood, putrid urine, tar or creosote; milky urine indicates chyluria; smoky by carbolic acid and salol; green colour by salicylic acid and indigo; dark green by thymol and kairin; dark blue by methylene blue; violet by resorcin. Santonine give urine greenish yellow colour, and acid reaction. Fuschine give a magenta colour; sulphonal reddish brown.

Smell.—A sweet smell of apple indicates sugar; smell of violets indicates presence of turpentine; fœtid ammoniacal smell indicates alkalinity of urine.

Reaction.—Urine is slightly acid in health. It is alkaline after a meal or from medicine or disease. It is highly acid if containing crystals of uric acid.

Urinary deposits.—These are many. Some of them can be detected by the naked eye, and they may generally be found deposited at the bottom of the vessel. Others can be detected by the aid of chemical tests thus: In alkaline urine alone may be found calcium phosphate, ammonium urate, magnesium phosphate or triple phosphates. In alkaline or acid urine we detect uric acid, urates, oxalates, phosphates and cystine. Other deposits are known as organized deposits and are detected under the microscope. These latter include pus, mucus, blood, tubecasts, torulœ sarcinæ, bacteria, spermatozoa, &c.

Tests.—In the matter of urinary analysis various chemical tests are applied for the detection of albumen, bile pigments and bile acids, chlorides, sugar, urea, etc.

Albumen.—Heat and nitric acid; if the urine is alkaline or neutral, add acetic acid to render it slightly acid, and then apply heat; if precipitate appears on boiling it may be albumen or phosphates; if on adding a drop or two of nitric acid the urine becomes clear, it is phosphates; if it remains turbid, it is albumen. If the urine is turbid or has a deposit which on heating disappears, it is the urates; if the turbidity only disappears on the addition of nitric acid it is phosphates, if not cystine.

Tests for albumen are interfered with if the patient has taken alkaloids, analgin, antipyrin, benzoic acid, benzosol, chloroform, copaiba, hypnone, piperazine, &c., and which may appear in the urine.

Bile Pigment and Bile Acids.—Vogel's colour table.—Put a drop of urine on a white marble table and gently add to it a drop of tincture of iodine so that the two fluids may touch but not mix. If bile pigment be present a fine green colour will be developed below the red iodine layer. With nitric acid a shade of colours will be developed.

Chlorides.—Add a drop of nitric acid, and then silver nitrate, until the precipitate ceases to form.

Sugar.—Fehling's test.—Add to the boiling urine a few drops of Fehling's solution. If sugar be present a yellow orange or red precipitate of cuprous oxide will form. Pavy's test.—It consists of sulphate of copper 5, potassium tartrate 10, caustic potash 20, and water 100.

Tests for sugar are interfered with by the presence in the urine of acitanilid, antipyrin, ammonium salts, benzoates, butol, bromides, camphor, carbo hydrates chloral, chloroform, copaiba, creatinine, cubeb, glycerin, iodides, phenacetin, pyrocatechin, salicylic acid, sulphonal, urethane, uric acid and urates.

Sugar in the urine may be found temporarily in cases of poisoning by alcohol, amyl nitrite, carbonic oxide, chloral, sulphuric acid, &c.

Urea.—Place a drop of urine containing excess of urea on a marble table and add a drop of nitric acid when crystals of urea nitrate form immediately. To ascertain the percentage of urea use ureameter and employ sodium hypobromite instead of chlorinated soda.

Mucus and Pus.—It is difficult to distinguish one from the other by the naked eye. Mucus is more flocculent and cloudy than pus. Pus is generally of a stringy consistance and thickish yellow and deposited at the bottom of the vessel. On the addition of liquor potassæ to the deposit of pus, the supernatent liquid being poured out it becomes gelatinized and tough and cannot be poured out. If mucus the addition of acetic acid coagulates it and forms delicate molecular fibres.

Apparatus necessary for analysis.—Test tubes, spirit lamp, a white porcelain dish, watchglasses, platinum foil, pipettes, urinometer, ureameter, litmus and termeric papers, and the reagents.

Urinary Disorders—

Acid nitro hydrochloric dilute for phosphatic deposits.

Alkalies as liquor potassæ with tincture of hyoscyamus or of belladonna to neutralize acid urine and thus control pain and frequent micturition in chronic cystitis.

Ammonium carbonate in 5-gr. doses renders the acid urine alkaline.

Bicarbonates, tartrates and citrates have diuretic action and increase the frequency of micturition.

Cantharis 1 or 2 ms. is useful in women who during coughing owing to weakness of spinctor of the bladder suffer from frequent incontinence and in voluntary passage of urine in drops.

Diuretics and other agents which act upon the urine.

Diuretin in cardiac and renal dropsy to increase the flow.

Salol better than benzoic acid or the benzoates; it neutralizes morbid alkalinity of the urine.

Sodium benzoate renders alkaline urine acid and checks formation of phosphates.

Water copious injection into the bladder is beneficial in cases of suppression.

Diet.—Fresh milk, fruit, fish, vegetable, useful to alkalinize acid urine.

Urticaria—Nettle Rash—

Acid carbolic and benzoic (1 in 200) of water as a lotion.

,, boric and chloral (10 to 1) as lotion.

,, nitric dilute as a wash prevents wheals and controls itching.

Antipyrin internally is very efficient.

Arsenic liquor or arsenic hæmol or arsenite of sodium internally useful in chronic cases.

Calcium chloride to prevent the rash.
Chloroform liniment or chloroform ointment to allay itching.
Emol flour as dusting powder.
Hydrargyri perchloridi and acid nitric dilute as lotion.
Plumbi acetas cum lactis as lotion is very useful to allay itching.
Sodium phosphate 1-dr. doses, or sodium salicylate, is very efficient.
Vinegar as lotion.
Warm baths are very useful.
Zinc carbonate, zinc oxide, each 3, with acid carbolic 1, lime water 25, and rosewater 25, as lotion to relieve itching.
„ oxide with acid salicylic and starch as a dusting powder.

Uterine Affections—

Acid carbonic as vaginal injection to relieve neuralgia of the uterus.
Aquapuncture very useful to relieve uterine colic.
Arsenic $\frac{1}{60}$ gr. after meals, if the uterus is irritable, is very useful.
Baths, of warm salt water, are useful in nervous uterine neuralgia.
Chloroform spray to relieve uterine neuralgia.
Iodized phenol is very beneficial as an intra-uterine medication. It is applied by a probe covered with cotton wool. It removes cervical mucus, relieves pain, softens and dilates the cervix, removes abrasions and erasions; under its use the menses become regular, digestion improves, and barrenness, if any, disappears.
Lead plaster to the back relieves pain.

Uterine Cancer—

Acid carbolic, a weak solution as injection, is a nice disinfectant and allays pain.
Acid carbonic solution injected into the vagina relieves pain.
Arsenic in small doses internally; arsenic with strong solution of iodine and glycerin locally useful to retard the growth.
Bromine, the best escharotic to destroy the growth.
Chloral hydrate as an anodyne is very useful to relieve pain.
Chloroform spray is useful.
Erysipelas toxin for injection produces erysipelas and cures cancer.
Glycerin of tannin with carbolic acid locally to check discharge and stench.
Iodine saturated solution thoroughly applied to the entire surface of the cancer checks hæmorrhage and the extension of the disease.
Iodoform as insufflation or as suppository with cocoa-butter inserted into excavations caused by cancer.
Medicines are only palliative.
Surgical measures are useful.
Thyroid preparations internally had curative effect on carcinoma of the cervix.

Uterine Congestion—Hypertrophy—

Abdominal bandage, skirt supporters.
Abstinence from sexual intercourse.
Acid carbolic on a probe wrapped with cotton into the cervix or uterine cavity checks uterine catarrh.
„ chromic, a nice application to the interior of the uterus.
Electricity, galvanic current, slowly interrupted in chronic congestive enlargement of the uterus.
Glycerin tampon to the os and cervix as a local hydragogue.
Glycozone is a very useful application to the tumefied cervix and uterus.
Gold salts in chronic metritis with scanty menstruation.

Hot water as injection or hot douche; also cold alternately. Elevated hips is a most effective measure of treatment.

Iodine tincture if injected into the cervix is a reliable alterative and excitant of uterine contraction and local stimulant.

Iodoform with tannic acid (1 to 8) as suppositories in inflammatory and hypertrophic condition of the uterus. It is equally useful in chronic metritis.

Iron as a tonic with other restoratives as cod-liver oil or with ergot, quinine, arsenic and potassium bromide is very useful in uterine congestions and hypertrophy.

Mammary and parotid extracts given internally in subinvolution and menorrhagia.

Pessaries if there is any displacement.

Potassa caustica and potassa cum calx are nice and effective applications in chronic metritis.

Potassium bromide has soothing properties; it diverts the blood from the uterus and lessens congestion. Used in subinvolution.

Rest is essential.

Scarification after dry cupping in chronic metritis.

Zinc valerianate 2 grs. internally, a nice nervine tonic.

Uterine Inflammation—Metritis—Endometritis—Perimetritis—Parametritis and Uterine Catarrh—

Acid carbolic undiluted alone or with hydrastis locally to the cervix on cotton wool wrapped on a probe in uterine catarrh.

„ chromic 15 grs. in hot water 1 oz. locally applied as a caustic to the cervix and cavity of the uterus when slough is required, used only after dilatation of the cervical canal.

„ nitric solution 5 grs. to 1 oz. of water in uterine catarrh; fuming nitric acid applied locally to the cavity is safe, but produces too much cicatricial tissue.

Glycerin of iodine, bromine and mercury for local application.

Hot water injection about the os very valuable if given for a long time.

Iodine with glycerin and hydrastis to the os cervix in endometritis.

Iodized phenol—1 of iodine to 4 of carbolic acid applied to the cavity gives relief.

Iodo tannin locally in chronic cases.

Iodoform as insufflation to the os or as suppository into the rectum in endometritis.

„ as suppository into the rectum or in pencils into the uterine canal.

Sexual intercourse avoided.

External remedies.—Blisters, compound camphor liniment with tincture aconite and chloroform to the hypogastrium, curetting to remove any vegetation, glyceroles of glycerine, butter of cocoa, cosmoline, vaseline, &c., hot foot-bath, leeches to the hypogastrum if the patient is plethoric, pencils of nitrate of silver, sulphate of zinc, tannin, plagets of tr. iodine, iodoform, perchloride of iron, nitrate of silver solution, nitric acid locally, poultices to the abdomen, puncturing of the cervix, vaginal injection of hot water to abort the attack of cellulitis.

Uterine Tumours—

Ammonium chloride 10 grs. benefits in fibrous tumours by restraining bleeding.

Calcium chloride $\frac{1}{10}$ gr. valuable to cure uterine fibroid, polypi, etc., it calcifies uterine arteries and also those of the body generally.

Iron sulphate if injected restrains bleeding.

Mammary extract is very useful in curing uterine fibroid.

Mercury bichloride $\frac{1}{16}$ gr. restrains hæmorrhage in fibrous or polypoid growths.

Recumbent posture while bleeding occurs.

Saline mineral waters are very useful.

Uterine Ulceration—Cervicitis—Ulceration and Erosion of the Os—

Acid carbolic locally over the surface of the ulcer.

,, ,, iodine and glycerin as tampon.

,, salicylic, with camphor, alcohol and petroleum ointment locally for indurated os.

Alum used as dusting powder or as ointment or solution applied to the os uteri or into the uterine cavity, or as vaginal injection or as bath, 1 oz. in 1 gallon.

Bismuth subnitras as a dusting powder or with glycerin as a cream as an application to the os.

Chloral hydrate solution locally.

Creosote 1, with alcohol 10, glycerin 20, locally applied to ulcers on the neck.

Glycerin 100, alcohol 50 and creosote 4, application to the ulcers.

Glycozone locally applied to the ulcerated cervix.

Iodoform and tannin packed round the os.

Nitrate of silver, solid stick applied to the surface of indolent ulcers after cleaning and drying with cotton wool.

Uvula, Relaxed—

Alumen exsiccatum locally.

Ammonium bromide 1 to 25 of water, a soothing and astringent application, or used as a gargle.

Amputation of the elongated portion after applying 20 per cent. solution of cocaine.

Astringent lozenges of zinc and tannin.

Vaginismus—

Avoid sexual intercourse.

Ether anæsthetic by inhalation if due to displacement, fissure, cellulitis.

Injections, hot water, into the vagina.

Iodoform in suppository if vagina is red and excoriated.

Removal of a portion of the vaginal mucous membrane on each side of the vaginal orifice.

Tents impregnated with various sedatives to dilate the vagina.

Thiol 1 and glycerin 2, applied as tampon into the vagina.

Vaginitis—Vaginal Catarrh—

Alterative and resolvent as plumbi iodide, potassium iodide and potassium bromide.

Bismuth carbonates with zinc oxide, and belladonna as pessaries.

Emollients as bismuth oxide, zinc oxide, borax with opium as injection.

Hip bath with poppy heads.

Silver nitrate solution 1 to 12 locally to the cervical canal and to the vaginal mucous membrane.

External remedies.—Vaginal injections of cold and warm water, plain or medicated, of gases as carbonic acid gas, or of vapours as chloroform, ether, &c.

Varicosis—Varicose Veins—Varicocele—

Alcohol injection into the vein.
Bandage or elastic stockings.
Chloral hypodermically.
Cold douche to the perineum and buttocks.
Flannel compress with solution of perchloride of iron.
Ichthalbin.
Ichthyol.
Injection of coagulating agents into large vessels.
Iodine with tannic acid as local injection.
Iron persulphate injection.
Operation—obliteration of the veins by wire ligatures.
Suspension of testicles.

Variola—Small-pox—Eruptive Fevers—

Acid carbolic with almond-oil or starch as paste locally to prevent pitting.
,, salicylic 1 dr. to 2 ozs. of hot water to sponge the skin as a gargle to the throat, also given internally if diarrhœa exists.
Chloral if high fever, delirium and restlessness.
Collodion, gutta-percha or india-rubber solution in chloroform to prevent pitting.
Eucalyptus oil as antiseptic inunction.
Iodine tincture as a paint to prevent pitting.
Iron and quinine internally if tendency to hæmorrhage.
Lime liniment applied to the face or neck.
Salol in mild cases to lessen local irritation.
Silver nitrate solution 20 grs. to 1 ounce as a paint or a silver nitrate stick inserted into each vesicle after rupture to prevent pitting.
Vaccinia antitoxin is very useful.

External applications.—Baths of corrosive sublimate, fats smeared over the face to allay itching and prevent pitting, exclusion of air from the pustules, ichthyol locally to prevent pitting, rice flour 1, starch 1, zinc carbonate 3 with zinc oxide 1 and olive oil 3, for application, vinegar with cold or tepid water to sponge the body. Keep the parts in a moist state to prevent hardening of the scabs.

Diet.—Tea, dry toast, raw eggs, milk, beef-tea, ripe fruits.

Formula.—To prevent pitting—tannin ½ dr., oxide of zinc ½ dr., calomel 5 grs., ext. opii 4 grs., cerate 1 ounce, as application.

Vertigo—Dizziness, Aural vertigo, or Minear's disease. It may be due to disordered stomach or liver, or to general debility, rarely to organic brain affection—

Ammonium bromide with cascarilla in vertigo from over-work, attended with restlessness, depression of spirits and sense of impending evil.
Electricity, the constant current, one node over the cerebral vertebræ and the other over the ear is of great benefit.
Gold salts in vertigo due to gastric disorders or to cerebral anæmia.
Iron citrate and strychnine in vertigo without any other head symptom and with depraved nutrition.
Mercury bichloride with cinchona and peppermint water is useful.
Nitroglycerin is useful in epileptic vertigo.
Potassium bromide useful in paroxysmal vertigo without any organic brain affection.
Tonics before meals and sodium bicarbonate after meals.

Visions.—They are affected by several drugs which act on the sight centres in the cerebrum, chiefly on the angular gyrus and occipital lobes. Thus :—

Alcohol produces hallucinations and delirium.

Bromides in large doses, visions of an intense character impressed permanently.

Cannabis, pleasant visions.

Digitalis, presence of light subjectively.

Sodium salicylate, disagreeable visions.

Vulvitis—Pruritus Vulvæ—

Alum 1 to 8 as lotion in vulvitis of children.

Arsenic is useful for eczema of vulva.

Lead acetate lotion as wash after the acute stage or concentrated solution in glycerin locally to relieve itching or eczema.

Sodium hyposulphite in lotion for excoriation sores or aphthæ of the vulva.

Wounds—Bed Sores, Gangrene, Inflammatory Ulcers—

Acetanilid, a dusting powder, over wounds.

Acid, boric, as a bactericide, in lotion (1 in 100), also as ointment as dressing for wounds.

„ carbolic, solution checks suppuration and corrects fœtor.

„ salicylic, used as a dusting powder to gangrenous and sloughing wounds.

„ sulphurous, diluted in solution or by fumigation, being less irritant, is superior as an antiseptic to carbolic acid.

Alcohol alone as an antiseptic dressing for suppurating wounds, or with camphor and castile soap as antizymotic or antiseptic dressing for contused wounds.

Alumnol, a powerful astringent, desiccant and antiseptic, very useful for deep wounds.

Ammonium carbonate hypodermically injected into the vicinity of wounds caused by poisoned arrows is very useful.

Aristol locally, a good substitute for iodoform.

Bismuth oxyiodide dusted into a wound as an antiseptic non-irritant stimulant of granulation, an excellent dressing for wounds after approximation of the edges.

Bismuth subgallate, a non-irritant, having bactericidal and drying properties.

Charcoal (wood) or yeast poultices.

Chloral hydrate, analgesic and antiseptic locally.

Creolin or lano-creolin in solution or ointment 1 to 20 of lanolin or as dusting powder.

Earth dressing.

Europhen and aristol equal parts as a dusting powder, or as an ointment 10 per cent. to sores and wounds.

Formalin as an antiseptic is very beneficial.

Gutta-percha dissolved in turpentine or chloroform as a protective to wounds.

Hydrargyri bichloridi (1 in 1,000) as an antiseptic for washing a cavity or wound and saturating the dressings.

Hydrogen peroxide liquid, as spray wash or irrigation.

Ice and salt applied to wounds to prevent inflammation.

Iodoform alone as a dusting powder on sloughing wounds or irritable or ill-conditioned ulcers or sores, or with collodion (1 to 9) as a paint on superficial wound while edges are held together.

Lysol obtained from tar oil 1 to 2 per cent. in solution locally.

Nitrate of silver to destroy unhealthy granulations.
Oakum.
Petroleum with olive oil, locally.
Styptic colloid, local, to prevent bed-sores.
Turkish baths.
Water dressing, hot water preferred.

Writers' Cramps or Scriveners' Palsy—

Bromide of zinc.
Counter-irritation if due to tender nerves.
Galvanic current.
Nux vomica.
Phosphide of zinc.
Rest.

Yellow Fever—

Acetanilid, or antipyrin, in the early stage.
Acid, carbolic, internally or hypodermically even after the coffee ground vomit.
,, nitrohydrochloric dilute internally.
Alkalies to counteract the hyperacidity of the stomach and intestines.
Ammoniated chloroform as a sedative, analgesic, and antipyretic.
Calomel at the beginning as a purge, followed by warm-water enema.
Chloroform, a few drops before each meal.
Cold sponging in the beginning, no time to be lost.
Diaphoretics, laxatives and diuretics.
Lime-water with milk to check vomiting.
Potassium acetate for the kidneys.
Rest is all important.
Stimulants as champagne.
Sulphur or sulphurous acid baths.
Sulphuric acid if vomiting of blood.

Diet.—Milk and lime-water.

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